# STEP-BY-STEP graphics

***Cover Story*** Gouache With the Rich Look of Oils

***Inside This Issue***

- How to Airbrush on the Mac
- Mac Magleby's Poster Tips & Screen Printing Secrets
- Putting Multiple Master Type Technology to Work
- Die-Cut Holiday Greetings
- Designing With Chipboard & Cardboard (with insert)
- How to Create a Kinetic Logo With Embossing
- Tonal Values With Oils
- Are Soy Inks "Green"?
- Plus Getting Paid; Career & Business Tips; Shortcuts

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**On Our Cover** Illustrator John Rush takes on a self-initiated project of epic proportions—creating a prototype painting as well as a complete book layout with drop caps and page borders—for an illustrated children's version of "The Legend of Beowulf." See page 96 for the details.

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*Poster Design and Production*

**36 McRay Magleby Meets Aesop**

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*Computer Illustration*

**48 Digital Airbrushing for CBS Sports**

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*Paper Specification and Printing (with Hands-On Insert)*

**56 Industrial Paper: Economical, Recycled and Fun**

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*Three-Dimensional Design*

**64 Greetings with Simple Die-Cuts**

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*Painting With Oils*

**70 Achieving Tonal Values In Oil**

Hayes Henderson achieves dimension and tone through rigorous brushwork and a subtractive painting process in an illustration for a printer's calendar. (By Simon Dumenco.)

*Identity Graphics*

**80 A 'Kinetic' Slant on Identity Graphics**

Is it hand within a hand? Or a globe? Or both? See how Dean Johnson Design created this 3-D logo by embossing an accordian-shaped design. (By M. William Lutholtz.)

*Digital Typography*

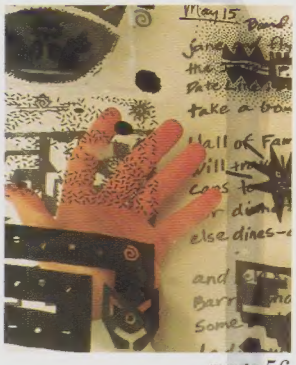
**88 Customized Type in an 'Instance'**

Here's the first real-world application of the new multiple master technology, which allows any digital type user to produce customized variations of a face instantly. (By Susan E. Davis.)

*Book Illustration*

**96 Retelling 'Beowulf' in Gouache**

Illustrator John Rush uses a fast-drying gouache technique that mimics oil painting as he illustrates this epic tale for an "on spec" children's book project. (By Richard Edel.)



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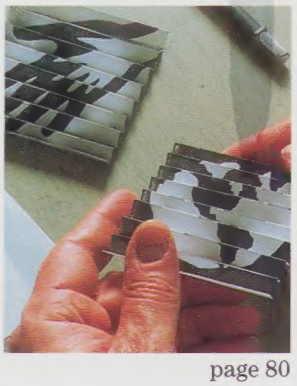

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**106 ABCs of Type**
"Copperplate: Engraving For The Masses" – Engraver's faces have enjoyed an unexpected renaissance of late. Learn how to use Copperplate Gothic and its cousins in new design applications. (By Allan Haley.)

**110 Freelancing**
"Getting Paid: How Organizations Work" – Sometimes collecting fees is the hardest part of a job. Whether you work with small or large clients, here's how to jog their accounts payable departments fast. (By Cameron Foote.)

**114 Methods of the Masters**
"Earl Horter: Pioneer of Modernism" – Learn how this gifted artist used the principles of design he learned from modern painting in the illustrations he created during the '20s and '30s. (By Albert Gold.)

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"Green Inks: Environmentally Friendly?" – Printing and production professionals share their views on the advantages and disadvantages of using soy- and other vegetable-based inks for commercial print applications. (By Julie Lewitt Weiss.)

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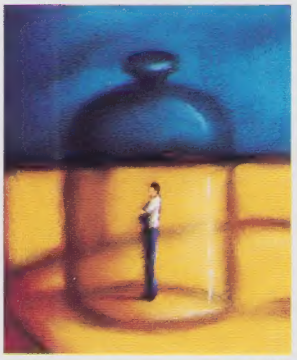

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MANAGING EDITOR
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SENIOR WRITER
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SPANISH TRANSLATION EDITOR
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EDITORIAL CONTRIBUTORS
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**Daniel Cutler Allan Haley**
**Daniel Dejan Kurt Klein**
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**David Epstein John Newcomb**
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# EDITOR'S NOTE

You don't have to reinvent the wheel! If we've learned anything at all during these last six years of documenting how artists and designers work, it's that simple axiom. Chances are, others out there have already made the mistakes, trashed their budgets, done the legwork—and if you are willing to listen, they are eager and willing to tell you how *not* to do it.

We feel this issue's fare puts as much emphasis on the how-not-to's as the how-to's, in order to help you avoid costly mistakes. As Iowan John Sayles explains how *not* to take the specification of industrial papers for granted: "If you don't understand the product, you can really get burned . . ." In addition to learning how not to get burned, you'll find out how Sayles planned, designed and produced the actual chipboard insert in this issue. (See page 56.)

Here are a few more examples I have culled from what we feel is our hottest summer edition yet:

—Do you count yourself among those who jumped into the fray and specified a job with soy inks before questioning whether they were as environmentally friendly as you were led to believe? Or perhaps your job involved a heavy coverage of black and you didn't realize you'd be charged 25 percent more for the black ink? In this issue's "PressTalk," you'll find out which "green" inks are really green, and how they stack up in terms of quality and cost. (See page 132.)

—Yet another such learning experience is embedded in our logo story demonstrating how you can design and emboss accordion-like shapes for unusual dimensional effects. If you comp up this kind of an embossed design using simple folds, strange things can happen to your art's original proportions. And it was in trying to solve this difficult proportion problem that Bruce Dean and Scott Johnson learned they could save valuable time by scanning the art and resizing it in FreeHand. (See page 80.)

—On the business side, anyone who has ever freelanced has had at least a few (if not many) experiences with slow- or no-pay clients. So in this issue, our freelancing columnist Cam Foote first tells you what *not* to do, and then offers several options, from upfront payment in thirds, to payment incentive approaches. (See page 110.)

—But if your disputes with clients escalate and you're actually thinking about going to court, this issue's "Business Side" columnist, author and attorney Tad Crawford, explores why you should first pursue a speedier and ultimately less expensive resolution through mediation and arbitration. (See page 26.)

—Finally, even something as simple as layering too much spray fix on your art can result in another how-not-to. Illustrator Hayes Henderson was plagued by unsightly dust specs in final printed pieces, so he developed a process in which he now sands his work with fine sandpaper three or four times during painting. (See page 70.)

**LOOKING AHEAD** I was fortunate enough to be invited to the new Kodak Center for Creative Imaging recently, for a three-day Adobe Photoshop class taught by photographer Rob Outwater and Adobe's Senior Art Director, Luanne Cohen. Situated in scenic Camden, Maine (near Rockport, the home of the Maine Photographic Workshops), the 27,000-foot facility—a former foundry—was equipped with 24 Mac IIfx color workstations, the latest scanners, film recorders and color printers. Because many of us had never used Photoshop before (some had never touched a Mac), we were glued to our color monitors in absolute awe (and fear) of the powerful technology. And how spoiled we all became with the continuous tone color printers within arm's reach, giving us high quality color feedback on our designs instantly. Of course, my feelings of trepidation only intensified when I stopped to think about the caliber of design, illustration and photography talent in the room—people like Eric Baker, Grant Peterson, Michael Mabry, Jennifer Morla, Craig Frazier, Peter Harrison, Lloyd Ziff and 15 others. We'll feature their classwork and impressions of the tools in our September-October 1991 issue!

Don't forget to mark your calendar now with the deadline for our annual cover competition: November 1, 1991. (See our Call For Entries on page 22.) The theme for the 1992 Annual is: "Designer's Guide to Illustration Techniques: The Traditional and the Digital."

Nancy Aldrich-Ruenzel

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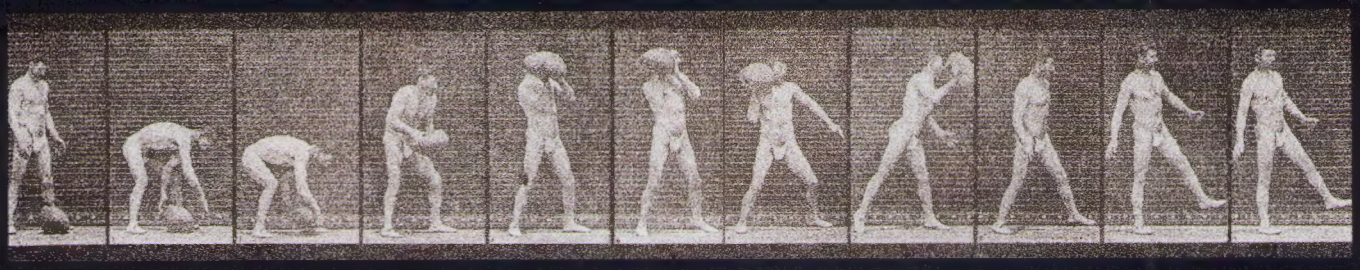

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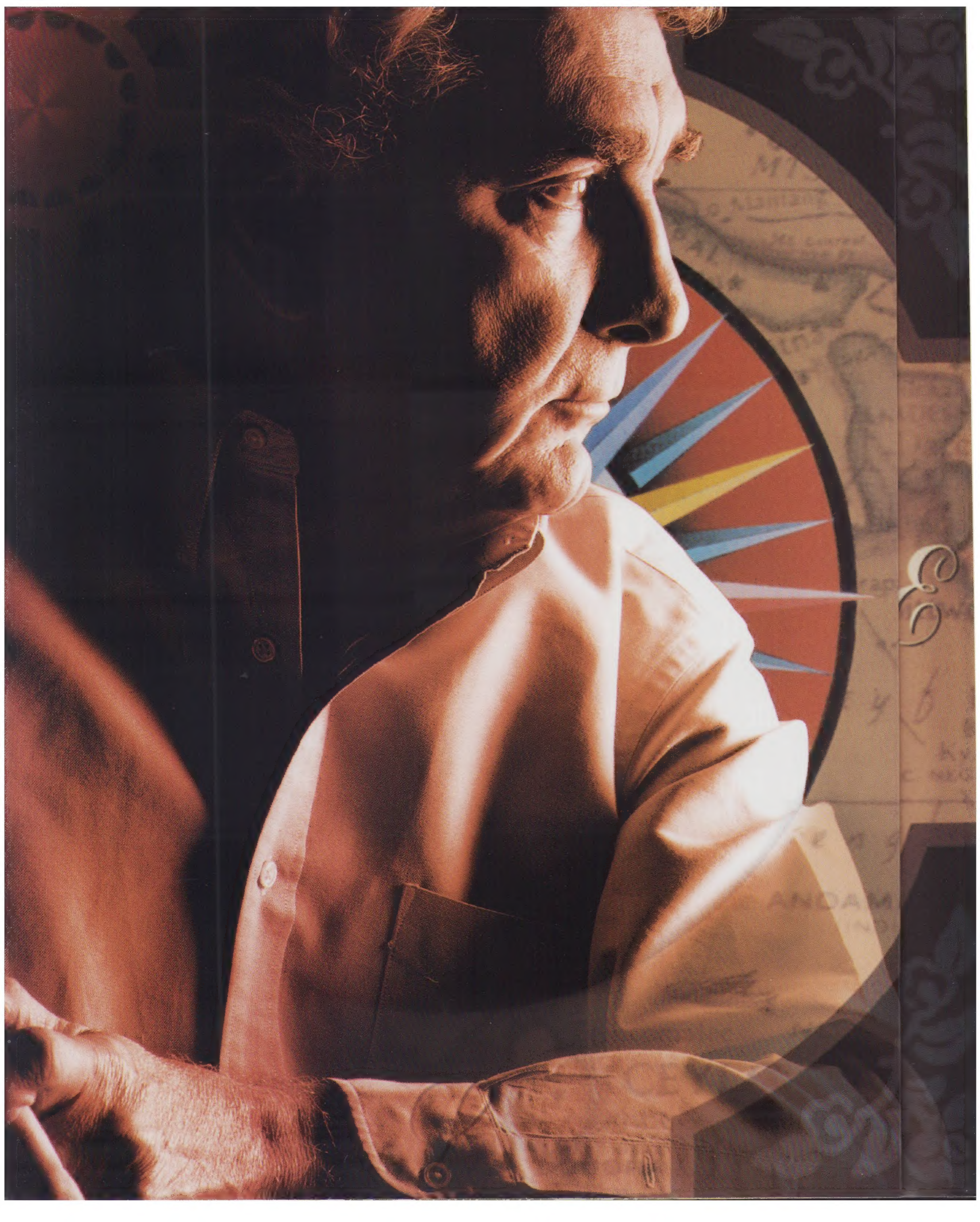

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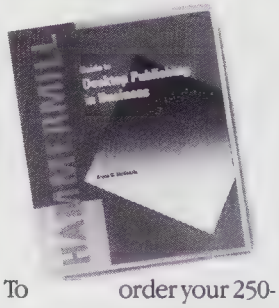


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# LETTERS

## Colorful Kudo

Your issue, "The Designer's Guide to Using Color" (V7N2) is perhaps the best of its kind I have yet seen. It not only brings us up to speed on the latest technological applications, but is so extensive as to provide a kind of text on color which I feel can be invaluable to any design student grappling with the problem.

My concern as an educator is the cost of such materials to students, many of whom are paying enormous costs for their education. *Editors' Note: For educators interested in our special school discount, call 800-255-8800 for more information.*

Finally, I am beginning to realize the immense burden that *Step-By-Step* is beginning to weigh upon my life. It's becoming another *National Geographic* kind of problem; I can't bear to discard a single issue, and my house and studio are beginning to lean distressingly away from plumb! *Step-By-Step*'s contribution continues to be enormous.

*David A. Niles*
*Associate Professor, Illustration*
*Rhode Island School of Design*

## Plethora of Palettes

In regards to the "Designer's Guide to Using Color" cover contest: After admitting the palette idea wasn't *that* original, the judges picked three entries based on that idea. I feel disappointed by their decision!

*Lidia C. Hasenauer*
*La Jolla, Calif.*

*Editors' Note: The winners were chosen by totalling the cumulative scores of the judges, so no one judge knew how his or her score would affect the outcome. Nonetheless, you have a point!*

## Recycling Input

Regarding the chart "Percent of Paper Recycling/Worldwide" in the article "Specifying and Printing Recycled Paper" (V6N6, p. 87), when looking at the diagram at top, your readers might think it shows the amount of recycled paper as the amount of *used* paper. But the figures actually describe the amount of recycled paper as a percent of *produced* paper.

If this chart was drawn with more relevant figures, it would show that Sweden, for example, recycles approximately 40 percent of its paper. The country's exported paper (75 percent of the production) can't be recycled within Sweden, of course. This explains the vast difference between the timber-rich, paper-exporting countries of Sweden, Norway and Finland, and the almost tree-less paper-importing countries of Denmark and the Netherlands.

*Jonas Pertoft*
*Grafisk Mediadesign*
*Uppsala, Sweden*

*Editors' Note: The chart you refer to was provided by Cross Pointe Paper, and we have forwarded your letter to the company for its attention.*

## Righting a Wrong

Why was it deemed necessary to flop the image of James Gurney's "Dinosaur Parade" (V6N7, p. 46)? This is an annoying practice in newspapers and magazines with photographic images, but with an art print, I feel the reputation of the artist is compromised.

I enjoy your magazine very much, and though I have read it for less than a year, the techniques I have absorbed have helped me make my first commercial sale.

*Ralph E. Vaughan*
*Chula Vista, Calif.*

*Editors' Note: We agree. Flopping is an annoying practice, and we did it purely by accident. Our sincerest apologies have been conveyed to James Gurney.* ■

*Editors' Corrections: On page 132 of the "Designer's Guide to Using Color," the text should have referred to K2 designer Michael Thompson, not Michael Johnson. On page 201, we should have noted that the Color Box (New York City) also works on interior design projects.*

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**Deadline for entries: January 31, 1992.**

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# CAREER TIPS

*Helpful hints covering a variety of professional issues.*

## HOW TO PROMOTE THOSE LOGOS

Using the identity logos you've created for clients in your own self promotions can often present a design problem. Do you display them on separate sheets? Spiral bind them? Mix them up with brochures and other work? Dallas-based Peterson & Co. decided the best way to handle the problem was to box them.

The firm had 2,500 4¾ x 4¾-inch boxes constructed, worked out a deal with a local printer to print the logos, and then had them trimmed to fit the box, which holds about 40 cards. Principal Bryan L. Peterson and his staff also designed a four-color cover,

dividers to distinguish corporate marks, corporate logos and non-corporate logos as well as promo cards; viewers see one when they open the box and another at the bottom of the box with the firm's name, address and phone number. To save costs, the covers are spray mounted to the boxes as needed. The real beauty of the idea is that the promo has a long shelf life. As the firm creates new logos, these can be added or exchanged for existing ones.

## ORGANIZATION OF BLACK DESIGNERS FORMED

"A lot of good people have reached a 'glass ceiling,'" says David Rice, chairperson of the newly formed Organization of Black Designers and owner of his own firm, DesignCom. "They've gone to the best schools, they've done good work, and still 'people of color' can't break through."

To increase awareness of black designers and their work, the 250-member OBD will publish a membership newsletter in 1991, and has plans to sponsor exhibits and produce an educational video of black designers' work for use in schools. A scholarship and internship program are also in the planning stages.

"The AIGA and the American Design Council are also dealing with this issue," continues Rice. "Given the European Economic Committee in Europe and the increasingly varied tapestry of people around the world, the U.S. needs to get in step."

For more information, contact OBD at 717 D St., N.W., Washington, DC 20004; (202) 659-3918, or fax (202) 347-5829.

## FREE MONEY: APPLY NOW

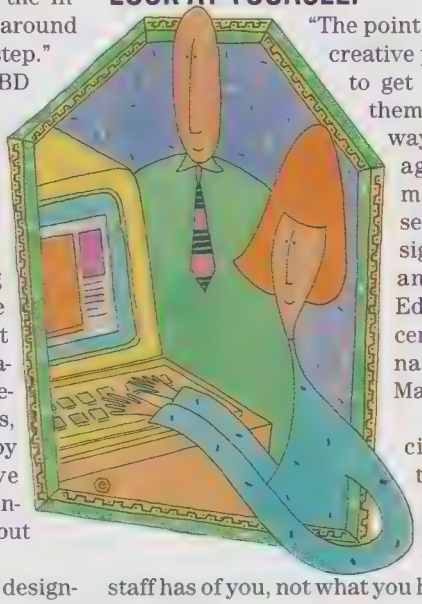
"If I was a designer, I'd be knocking down the door to apply for these grants," emphasizes Mina Wright Berryman, acting director of the National Endowment for the Arts' Design Arts program. In other words, says Berryman, there is an interest by NEA award committees to give graphic designers grant money for interesting and innovative projects, but not enough people are applying.

That's primarily because many designers are not even aware these grants are available to them. But under the Design Arts Program, NEA awards scores of grants annually to graphic, industrial and interior designers to pursue special interest projects. Grants for these projects range from $5,000 to $20,000 for individuals, up to $50,000 for organizations.

Examples of design projects awarded grants have included: films on design issues; creating an original typeface; experimenting with new computer image-making technology; designs for new products; development of new graphic systems; curating design exhibitions and competitions; design consultation for signage; independent study and travel with the U.S.; developing a project kit for teaching design in grade schools; exploring design history and hundreds of others.

But designers shouldn't necessarily limit themselves to these ideas, adds Berryman, because the award committees are very interested in creative, new approaches, especially in applied design. If you have a special project on the back burner that you think may advance design and possibly benefit the public, even if it is at the incubation stage, applications are reviewed twice a year. The next deadline for project grants for individuals is Sept. 13, 1991. Guidelines can be obtained from the National Endowment for the Arts, Design Arts Program, Room 625, Nancy Hanks Center, 1100 Pennsylvania Ave., N.W., Washington, DC 20506; (202-682-5437).

## TO MANAGE CREATIVES, LOOK AT YOURSELF



"The point in managing creative people is not to get more out of them, but to find ways to encourage them to manage themselves," said designer, author and educator Ed Gold at a recent AIGA seminar on Design Management.

It is especially important to start with the actual expectations your staff has of you, not what you have of them, he adds. These expectations include:

- To do everything you can just to stay in business.
- To surround them with the best co-workers possible.
- To keep them well-informed.
- To be treated fairly, especially when it comes to compensation.
- To teach them and to train them.
- To set a good example.

"Creative people want you to make them feel you're absolutely determined to make your firm the best possible place in the country for a creative person to be working," concludes Gold. "You have to accept that challenge. . . . Your goal should be to develop employees who are not merely as good as you but who are better than you."

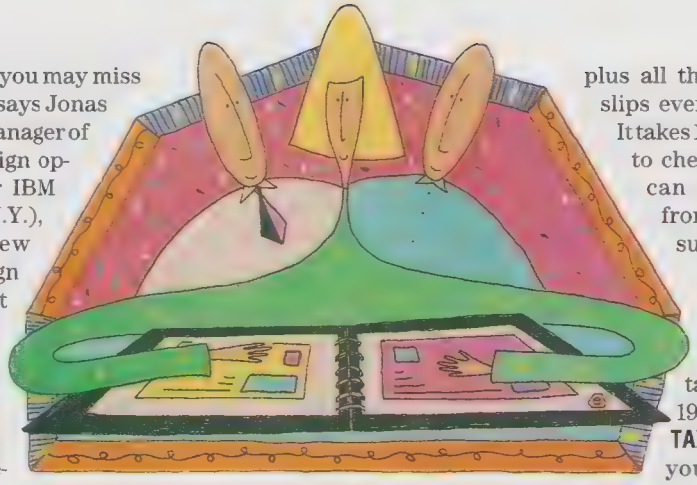
## CAPABILITIES BROCHURE? THINK AGAIN . . .

Contrary to advice from some consultants, sending a capabilities brochure to a large corporation like IBM may not be the best way to land new design business.

"They tend to demonstrate a womb-to-tomb coverage of everything in the world

Illustrations by Emily Polishook

you do, and you may miss the target," says Jonas Klein, the manager of graphic design operations for IBM (Armonk, N.Y.), in AIGA-New York's Design Management Seminars, "White Papers." And don't send slides, ads or annual reports either. Klein says annual reports aren't a particularly good indicator of a design company's capabilities; he is not interested in advertising and he doesn't find slides an effective medium to demonstrate printed material.



What he does like to see are examples of product or corporate promotional work—editorial communications—that are quality samples of a firm's work. And whether the contact has been made by phone or mail, the key is to present not only your design skills but "your intellect and intuitive powers," adds Klein. "Present as quickly and neatly as you can—if not the promise, at least the hope—that you can solve a business communications problem. You need to be candid and responsive. You need to ask the right questions. You need to listen to the answers."

## DEATH BY TAXES: YOU CAN ESCAPE IT

The number one cause of small business failure is neglecting to plan for taxes, according to Dan Swart, a Sacramento-Calif.-based certified public accountant who assists firms with their start-up and financial management. "It has little to do with a person's design abilities or salesmanship," he adds.

Swart outlines a scenario he sees frequently: A small firm has a profitable year. Instead of looking ahead to April 15, the firm pays off its immediate debts. The firm's owner may sleep better initially, but when tax time comes, he or she needs that already spent cash to pay the IRS. Then, says Swart, "The monkey is on your back to stay."

Another common problem for business owners, explains Swart, is assuming that payroll taxes are being paid by their accounting departments or comptrollers. If they aren't, "this can devastate a company," he says. "Get copies of cancelled checks plus all the deposit slips every month. It takes 10 seconds to check, and it can save you from a nasty surprise."

Swart provides these additional tax tips for 1991.

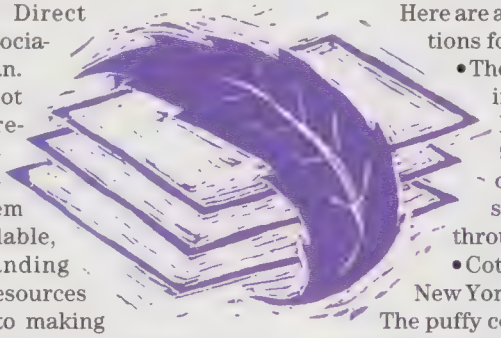
**TAX TIP 1** If you employ freelancers, be aware that the IRS is making the definition of "independent contractor" (or freelancer) narrower and that of "employee" broader. For instance, if you have a freelancer who has been working on new computer equipment in your office more and more frequently, he or she might be deemed an "employee" by the IRS. Check with your accountant for the exact criteria.

**TAX TIP 2** Those lucky few who earn more than $150,000 may not be feeling so lucky in 1991. The tax rate for this group is up from 21 percent to 24 percent, and itemized deductions will also be curtailed.

**TAX TIP 3** For those who earn less than $150,000, the tax laws have changed very little. However, if you had planned to leave your business to your children, this might be a good year to do it. Estate laws have been liberalized and may benefit your tax scenario.

## 'CRADLE TO GRAVE' RECYCLING

When designing a new package or product with recycling in mind, designers must take a "cradle to grave" approach, according to Chet Dalzell, Direct Marketing Association spokesman. This means not only using recycled materials and producing an item that is recyclable, but understanding the natural resources that went in to making the material—think "manufacturing to landfill," he says.



The DMA has published a 68-page booklet, "The DMA Environmental Resource For Direct Marketers," which aims to provide designers with the information they need to make informed decisions. Questions such as, "What will your customer be able to recycle?" "Should you produce a piece that is easily handled by today's solid waste management?" and "What kinds of inks, printing and manufacturing processes are available?" are discussed by experts from Publisher's Clearing House, R.R. Donnelley, the American Paper Institute and Champion Paper, among others.

"The goal is to get a dialogue going with your vendors and to explore alternatives in materials," explains Dalzell. "You can serve both the environment and your bottom line."

The booklet is available for $7.15 (which includes postage) from DMA's Publications Department, 11 West 42nd St., New York, NY 10036; (212) 768-7277, ext. 194.

## WHERE TO GET THE ICONS YOU NEED

You've religiously used all recycled products in your new package design. In fact, the materials you have specified are recyclable themselves. Now where do you get those little triangle icons that tell the world how conscientious you've been?

Printed on recycled paper

Printed on recyclable paper

Fax or mail your request to Peter Bunten at the American Paper Institute (260 Madison Ave., New York, NY 10016; 212-340-0663; fax 212-689-2628). After confirming that you have indeed designed with recyclability in mind and met API standards, the appropriate camera-ready triangles will be issued.

Here are a few more "icon" organizations for your files:

- The Wool Bureau (360 Lexington Ave., Seventh Floor, New York, NY 10017; 212-986-6222). Users of this organization's triangular symbol must be licensed through the Bureau.
- Cotton, Inc. (1370 6th Ave., New York, NY 10019; 212-586-1070). The puffy cotton ball icon is issued to products made from 100 percent U.S. cotton. Users must apply to the organization.
- Underwriters Laboratory (333 Pfingsten Road, Northbrook, IL 60062; 312-272-8800). The "UL" symbol is also issued through an application process. ■

Woodcut illustration by David Ceradini, Michael Peters Group

# STEP-BY-STEP GRAPHICS ANNUAL COVER COMPETITION

**The problem** Create an original, full-color cover for our 1992 Annual, titled the "Designer's Guide to Illustration Techniques: The Traditional and the Digital," that addresses the title, using any technique or combination of techniques.

## JUDGING

Entries will be judged on the basis of theme and magazine cover appropriateness, and technical and creative excellence. After a preliminary pre-judging by the magazine staff for cover suitability and reproduction quality, final winners will be chosen by an international panel of judges well-versed in traditional and electronic illustration and design, including illustrator Gary Kelley; *Atlantic Monthly* Art Director Judy Garlan; computer illustrator Javier Romero; and others.

## CALL FOR ENTRIES

**Who is eligible** Professionals as well as students working in all areas of visual communications. **Size, format, color** Proportion your artwork to our vertical cover format. (Full bleed: 8⅝ x 11⅛ inches.) Entries must be rendered in full color; mechanicals with callouts will not be accepted. Take the title of the Annual, our logo and cover type into consideration but you do not have to include them in your artwork (unless the title is integral to the design). Submit 6 identical 35mm slides of each entry; no original artwork accepted. Label each slide mount with your name and phone number. (No glass mounts please.) Winner and runners-up must supply original artwork upon publication. **Deadline** Each entry must include the entry form; all entries must be received by 11/1/91 (multiple entries are permitted). Slides will not be returned. *Step-By-Step Graphics* is not responsible for damage to entries or for late delivery.

## WHAT YOU WIN

The winning design will be reproduced on the cover of our 1992 Annual which will be published in March 1992, and distributed to some 50,000 readers in more than 50 countries. The cover artist also wins a free visual communications workshop from Dynamic Graphics Educational Foundation (DGEF) worth up to $1,000 (travel and lodging not included). Runners-up will see their work published inside the Annual and will receive a one-year subscription to both *Step-By-Step Graphics* magazine and *Step-By-Step Electronic Design* newsletter.

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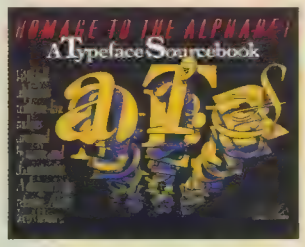


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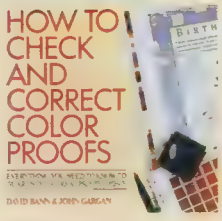


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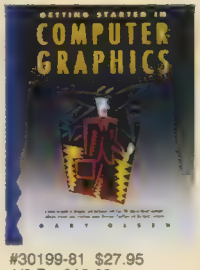


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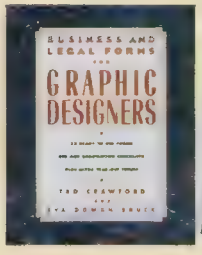


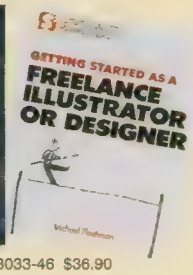


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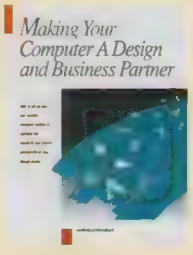


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# How Mediation and Arbitration Can Help

*Save money on legal fees with this approach to settling everyday business disputes.*

**By Tad Crawford**

When the relationship between New York City illustrator Susan Gray and her representative ended, the rep refused to pay her what was owed. Gray didn't know where to turn until a friend suggested the Joint Ethics Committee (JEC). When she wrote to the rep and suggested they go before the Joint Ethics Committee and abide by its decision to settle their dispute, the rep simply sent her the money.

That was more than a decade ago, and it prompted Gray to become one of the Graphic Artists Guild's representatives on the Joint Ethics Committee, a group that will mediate and arbitrate disputes. Founded in 1945, the JEC established a Code of Fair Practice for the graphics industry. The membership of the JEC now includes representatives from the Advertising Photographers of America, The American Institute of Graphic Arts, the American Society of Magazine Photographers, The Art Buyers Club, the Art Directors Club, the Graphic Artists Guild, the Society of Illustrators, and the Society of Photographer and Artist Representatives.

## A PANEL OF PEERS

In a mediation, parties seek the help of the JEC to resolve disputes. However, they are not bound by what the JEC mediators propose. Arbitration requires that the parties agree to be bound legally by the decision of the arbitration panel. If someone who has lost an arbitration refuses to pay, the arbitration award can be entered in a court for purposes of enforcement.

Of course, the JEC is not the only body that can offer arbitration services. On the West Coast, the California Lawyers for the Arts offer a similar program titled "Arts Arbitration and Mediation Services" from both their Los Angeles and San Francisco offices. The American Arbitration Association is also well known for providing assistance. Or, if you prefer, you can simply choose someone you both know and trust to act as the arbitrator.

One advantage of the JEC and California Lawyers for the Arts programs, when compared to the American Arbitration Association or simply going to court, is that their panels are carefully selected for their knowledge of the specific trade practices in dispute. "People come to the JEC because they are being heard by their peers, people who understand the industry and its nuances," Susan Gray observes. "We always have a fair balance on the arbitration panel, so each member understands the particular issue before the panel."

How does the JEC decide whether a case should be mediated or arbitrated? Assuming the parties have no agreement to arbitrate, Gray says: "Arbitration is recommended on a case-by-case basis. Mediation is suggested by the JEC when it seems obvious from the correspondence that both sides are amicable, want resolution, and are looking for impartial colleagues to aid them in coming to a fair decision. If there is animosity, or a substantial financial issue involved, arbitration is more likely to be recommended."

## FORGING A CONCILIATION

Some cases have been resolved in the letter writing process used by the JEC to set mediation or arbitration in motion. Both sides may decide to get together and settle the dispute between themselves.

The California Lawyers for the Arts en-

*(Continued on page 28)*



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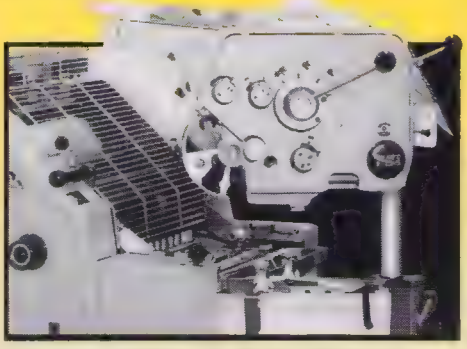

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*(Continued from page 26)*
courages this approach. Associate Director Bill Weiss describes how conciliation healed the rift between a photographer in San Francisco and a color lab in Anaheim after the color lab damaged some film it developed. "They were in different locations and emotional, so I communicated with both to facilitate their understanding of each other and their communicating possible solutions. They both agreed to a settlement in kind, which created good will and everyone was happy."

Of course, not every dispute can be resolved so nicely.

## ENTERING MEDIATION/ARBITRATION

In a dispute between a fashion illustrator and a women's apparel company, conciliation did not work. The company had given an assignment, rejected the drawings, and then promised to pay if the illustrator would revise the drawings. After the revision, however, the company still refused to pay and gave the drawings to another artist who traced them. The company then used them but said the printer had found the original drawings unusable and refused to pay the first artist.

Both parties agreed to mediation under the auspices of the Joint Ethics Committee. After hearing the details, the panel felt that the original drawings has been suitable for reproduction by the printer and had been misappropriated by the client. The illustrator and the client agreed to a settlement of 70 percent of the original fee. In addition, the panel suggested warning the second artist that plagiarism is unethical.

When an illustrator's rep and an ad agency disputed whether the use of illustrations in top women's consumer magazines was additional image, the parties agreed to arbitration before a panel of the JEC. The rep believed that only usage for a trade ad had been agreed to and that the $3,200 for four illustrations was a fair price for that usage. The panel agreed that the use in the women's consumer magazines was beyond the agreement and awarded the rep and illustrator the additional $800 they felt should be paid. But what if a party is unwilling to settle and does not want either mediation or arbitration?

## FORCING ARBITRATION

Neither the JEC nor any other arbitration group has the power to force parties to a dispute to mediate or arbitrate. However, the parties themselves often agree by contract that they will arbitrate in the event of a dispute. For example, in "Business and Legal Forms for Graphic Designers," I recommend the following provision be included in each contract: "All disputes arising under this Agreement shall be submitted to binding arbitration before [name of group] in the following location [place] and shall be settled in accordance with the rules of the American Arbitration Association. Judgement upon the arbitration award may be entered in any court having jurisdiction thereof. Notwithstanding the foregoing, either party may refuse to arbitrate when the dispute is for a sum of less than $[amount]."

This contractual provision forces both parties to submit to arbitration if either party demands it. In the absence of a provision like this, both parties must agree to arbitration. The better financed party may choose to go to court instead and hope to wear down the other party. However, use of the last sentence in the arbitration provision should be decided on a case-by-case basis. If the small claims court in your area is quick and inexpensive, you might prefer to sue for amounts less than the maximum amount for which suit can be brought in small claims court. Of course, going to small claims court will deprive you of the opportunity to be heard by your peers. Another approach might be to require mediation before arbitration, but this may only prolong the procedure.

## SPEEDY AND INEXPENSIVE

Among the advantages of mediation and arbitration are the speed of resolution and the cost savings. "The JEC process is not usually as long and drawn out nor as costly as going to court," says Gray.

The savings in legal fees can be enormous. For amounts above the small claims court limit and less than $5,000, it is very difficult to bring a lawsuit because of the likelihood that lawyer's fees will devour any damages that are won (or devour the litigant's savings if the case is lost). An agreement to arbitrate ensures that justice can be served in disputes involving amounts in this problematic range.

Nor must any party fear that they will face a hostile arbitration panel. Most arbitration procedures allow for a method by which both sides can avoid or remove arbitrators who they feel might be biased in some way.

But what about creative professionals who are not located in California or New York City? The JEC will deal with any parties who are willing to come to New York City. In one case, the California Lawyers for the Arts used a conference call to assist two parties in Nevada.

An exciting possibility is the creation of mediation and arbitration services in more cities and states. To help launch such services, the JEC makes available a packet titled, "How to Establish a Joint Ethics Committee." ■

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*Tad Crawford, attorney and author, is the president of Allworth Press, New York City, and author of numerous books for creative professionals including the popular "Legal Guide for the Visual Artist."*

*To obtain additional information about mediation and arbitration, you can contact the organizations mentioned in this article at the following addresses: Joint Ethics Committee, P.O. Box 179, Grand Central Station, New York, NY 10163; California Lawyers for the Arts, Fort Mason Center, Building C, Room 255, San Francisco, CA 94213, or 315 West 9th St., Suite 1101, Los Angeles, CA, 90015; and the American Arbitration Association, 140 West 51st St., New York, NY 10020.*

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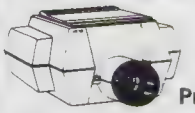

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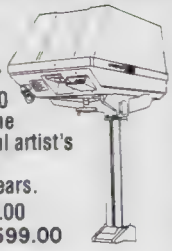

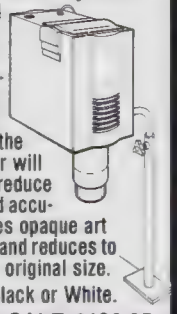

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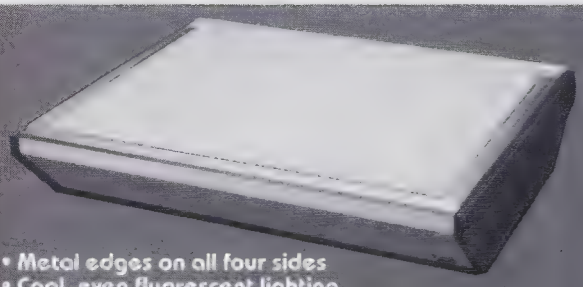

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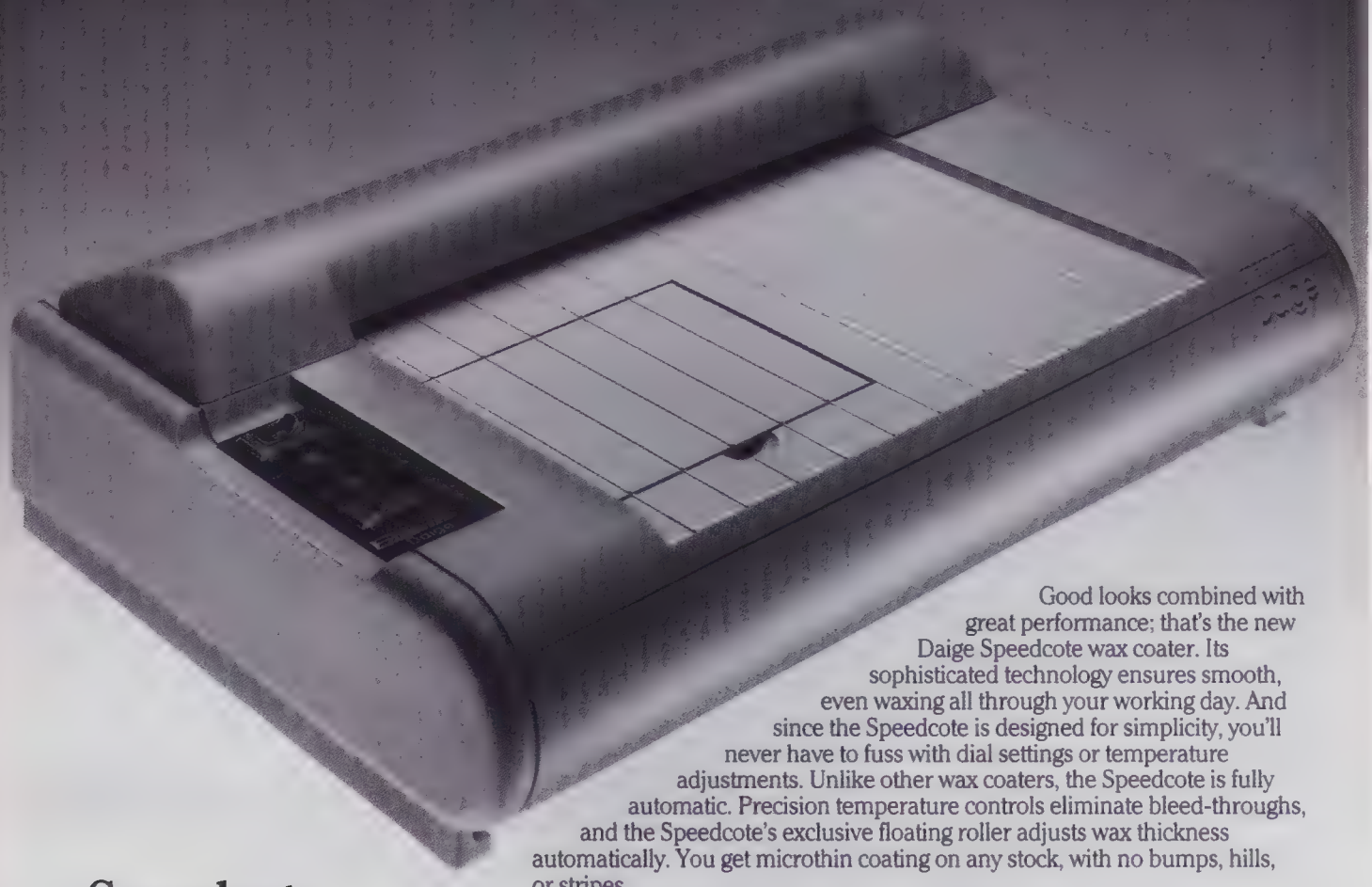

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*Circle 19 on Information Card*

# McRay Magleby Meets Aesop

*Using subtle color effects mixed on press, BYU's noted art director creates a screen-printed poster for spring registration.*

**By Simon Dumenco**

It is a great irony that institutions of higher learning often produce visual communications that approximate the vernacular style of grade school theatrical posters and garage sale flyers.

Remember the registration deadline posters at your college? Chances are—if you noticed at all—they were hastily hand-lettered affairs, photocopied onto letter- or legal-sized paper. If the registration department was feeling a bit fancy, maybe the posters were copied onto some of that sky blue or goldenrod paper that everybody has sitting around their copy rooms.

But not Brigham Young University (BYU). If you've been a student at this Provo, Utah-based institution at any time within the last decade-and-a-half, you've been exposed to a level of visual communication that is truly world-class. You've been, well, a bit spoiled. Because at this academic outpost there is some extraordinary design work going on. The reason: The internationally-acclaimed illustrator/designer/art director McRay Magleby works there.

The 10-person department that he directs, BYU Graphics, produces much the same sort of thing as most in-house university design departments: scholarly tomes, recruitment brochures, that sort of thing. But it is the registration deadline posters that Magleby himself designs that have brought particular fame to the university. Produced twice a year, the posters have been perennial favorites with judges of national design competitions. Look at any of the annuals from recent years and chances are you'll find—there among all the high-priced corporate identity systems, national magazine spreads and shimmering print ad campaigns—Magleby's posters reminding BYU students to sign up for their classes.

The posters are remarkable not only because of their exquisite design—and indeed, Magleby is one of the undisputed masters of poster design; in 1986 one of his works was designated "The Most Memorable Poster in the World" by an international jury of artists in Paris—but also because of their means of production: an elaborate color-blending screen printing process that has raised the very level of the art.

To demonstrate the intricate process involved in producing Magleby's legendary posters, *Step-By-Step Graphics* followed the production of a recent registration deadline poster based on another legend—the story of the tortoise and the hare, from "Aesop's Fables."

## CONCEPTING

BYU Graphics, it is important to note, functions much like a full-service advertising and design studio. BYU's Registration Department—which Magleby refers to as "the client"—pays a fee to BYU Graphics, and BYU Graphics takes it from there, handling everything from conception to design to delivery of the printed piece.

"We've been doing these posters for about 15 years," says Magleby, "and the client leaves it totally up to us as to what subject to come up with to tie into registration. So we've done a lot of different subjects. Several years ago, I did a series of posters based on Greek myths, and I liked them quite a bit." For the most recent series, he says, "I'd been thinking that I'd like to do something similar [thematically], but with a different look to them." Magleby hit upon playing off of "Aesop's Fables." Naturally, the story of the tortoise and the hare struck Magleby as a particularly pertinent fable.

The registration department's limited budget has inspired Magleby to supplement the total project billing with a bit of creative financing. "Nowadays," he says, "the registration department has a $1,000 budget for 100 posters"—including de-

**Screen Printed Posters** For Spring 1991 registration at BYU, McRay Magleby turned to Aesop's famous fable of "The Tortoise and the Hare." The artist creates the subtle screen-printed color and tonal effects by anticipating how the colors will interplay with each other. His design philosophy, in a nutshell: "Have some kind of dramatic image that would draw people to it, and then just have the type large enough so that you could read it from a foot or two away."

sign fees and the very-laborious six-color, hand-pulled screen printing. "And we can't do it for that, so what we do is run some extras and sell them for $50 apiece to anybody who wants to buy them. We'll just keep reprinting them for as long as there's an interest in them." BYU Graphics has produced a poster catalog packet that's been advertised in national design publications. Given the cachet of Magleby posters—not to mention their sheer beauty—they tend to sell rather briskly.

Magleby is the idea man on the registration campaign. "Usually I'll think of a subject and then I sit down with the copywriter, Norm Darais; he's in another department—University Publications." The collaboration, you might say, is low-key. Magleby explains it this way: "We have a thing going downstairs that we call the co-op where we sit down and have toast and drink grapefruit juice. And while we're doing that, we talk about the poster, and the direction it'll take, and a little bit about the copy. And usually I'll do the research for him. For instance, I went to the library and got a bunch of books on fables. I chose which fables I thought would be the best, and found different versions of them. Norm's really good at writing copy to fit a certain space. So I gave him guidelines as to how much copy to write."

**Fabled Series** Two more pieces in Magleby's fable series are "The Fox and the Grapes" and "The Goose That Laid the Golden Egg."

Darais summarizes the fable into three concise but descriptive sentences and added this revised moral: "Get hopping now. Don't make Spring Term registration a hair-raising experience. Select your classes and shell out your tuition and fees before deadline—April 22."

## PRODUCING ROUGHS

Magleby carefully tracked the evolution of his poster on a job sheet. For the tortoise and the hare poster, the creation process spanned a little more than six weeks. It went like this: Week one, concepting (including brainstorming sessions with Darais); week two, roughs (Magleby was designing while Darais was writing); week three, the final copy was due from Darais; week four, the mechanicals were due; week five, the film positives were due; week six, the poster was printed.

Magleby's work is compositionally minimalist, visually spare, and invariably centered around a striking illustration. "That's the approach we've used on most of our posters: have some kind of dramatic image that would draw people to it, and then just have the type large enough so that you could read it from a foot or two away." It is, irrefutably, poster design.

It stands to reason that Magleby's posters are illustration-centered because he himself is an illustrator. But the fact that he consciously avoids using his department's Macintosh computers to produce the posters also seems to contribute to his aesthetic. Macs, of course, afford designers an orgy of typographic options; the result is that much Mac-based design is very type-centered. Therefore, unlike a lot of the posters seen in annuals these days, Magleby's are not type-intensive. In fact, he hand-lettered the type for this poster. Though he frequently uses the Mac for other types of design work, "I think that I probably won't use the computer for the registration posters very often," says Magleby, "unless I want to do a lot of patterns or step-and-repeats."

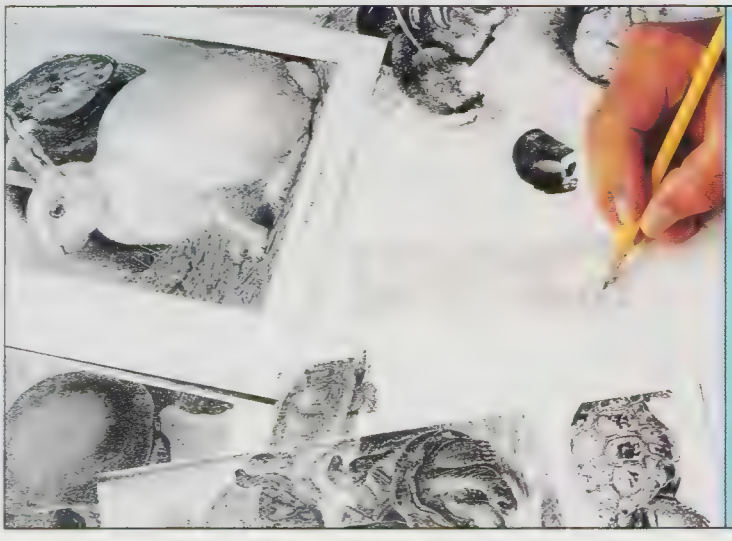
To work out the design, Magleby sketched from reference. His primary source was "Animals: 1,419 Copyright Free Illustrations of Mammals, Birds, Fish, Insects, etc." (1979, Dover Publications, New York), where he found tortoises and hares. "Usually I do the first sketches even before I talk to Norm just to kind of get a rough idea of the shape of the poster and where the copy's going to go and what the general look is going to be. And I usually explore four or five different options as far as the format, then narrow it down to one, or maybe two, and then get together with Norm."

For this poster, Magleby had in mind a vertical format using the full length of a standard size of poster stock: 35 x 23-inches. (The wavy line die-cut trim evident in the final printed piece was decided upon later; it brings the total down to 17¼-inches.)

Magleby rendered several different pencil roughs of the tortoise and the hare, varying his perspective each time. He settled on a diminishing perspective, with the rabbit in the foreground and the tortoise behind on a winding path. (See Figures 1 and 2.)

**COLOR SKETCH** Color factored into the design process early on. "When I'm doing the pencil roughs I think more about darks and lights. And I usually start by doing the pencil roughs and then laying in some blacks with a marker to kind of get the overall differences in value, and then go back with colored markers and pencils to get the color." Magleby drew this comp on bond paper and to see how it would look on a black background, cut a window in the stock he planned to use (Customcote, Sullivan Paper) and pasted the drawing on the reverse side. He simulated the type on the stock with a gold pen (Pilot). Even at this rough stage,

1 Magleby sketched out his roughs in several different configurations, varying perspective each time. Though in this image he is shown rendering a horizontal depiction of the tortoise and the hare fable, he ultimately settled on the vertical format (with a diminishing perspective) started in the lower right corner of his tissue paper.



2 Here the artist sketched from reference using the book "Animals: 1,419 Copyright Free Illustrations of Mammals, Birds, Fish, Insects, etc." (1979, Dover Publications, New York). Magleby is paring down the image to a simple shape, but the reference material will allow him to give his drawing authenticity.

Magleby was already envisioning six runs on the screen printing press. (See Figure 3.)

## SCREEN PRINTING PLANS

The genius of Magleby's design is that from the six runs he plans, he achieves hundreds of individual hues on the final printed piece. He does this by specifying gradated blends as well as by overlaying inks with varying degrees of transparency. While most designers do a bit of guesswork about how their final piece will look–it is the universal lament that proofs never quite look like what comes off the press–for Magleby, that sort of presaging is the most important part of the design process.

His key considerations are:

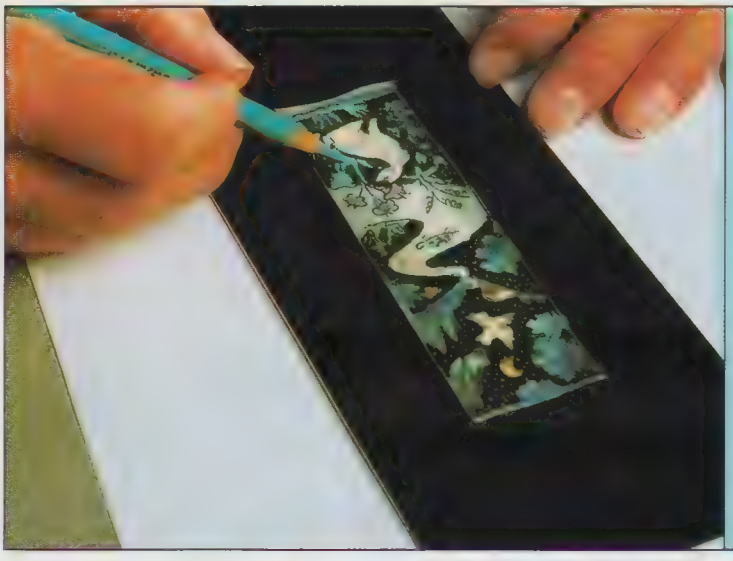
1) Unlike traditional design in which the illustration functions as an autonomous whole which is then integrated into the layout, Magleby must consider his illustration, fundamentally, as countless disparate blocks of color that will only interact, for the first time, on press.

2) He must specify the positioning and direction of color breaks when he indicates that two colors will be alternated on a single screen printing pass. (Refer to Figure 13 where the color break is blue-green-blue-green-blue-green-blue. In this pass Magleby intended for color breaks to occur within individual elements of the illustration, for instance, within the block of leaves.)

3) He must be able to divine how various semi-transparent overlays of color over existing blocks of color will appear. (See the fourth pass in Figure 17, where a gradated black is screened over three other previously applied color runs–ivory, blue/green and pink/purple.)

In short, Magleby must transform the limitations of screen printing into advantages. It is a process he has been developing ever since he expanded the screen printing section of his department when he first arrived at BYU two decades ago.

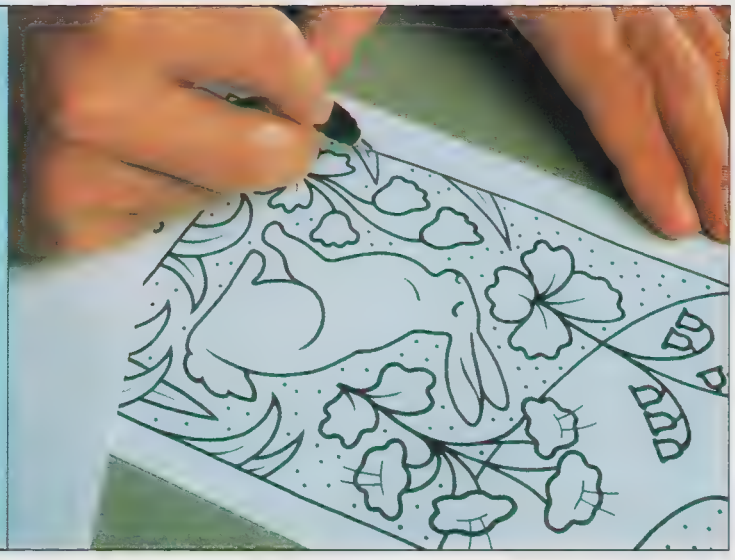
"I enjoy large areas of flat



**3** Magleby drew a miniature color rough on bond paper with markers and colored pencils and placed it into a window on the black coated stock the posters would print on (Customcote). "I think of color from the very start," says Magleby. "I usually start by doing the pencil roughs and then laying in some blacks with a marker to get the overall differences in value, and then go back with colored markers and pencils to get the color."

**4** Here Magleby inked his outline–which would eventually be printed in gold in the final piece–using a Rapidograph on tissue paper. He first enlarged his original black-and-white pencil rough to these working dimensions, and then traced and retraced onto the final tissue until he was satisfied with his curves and line widths.

**5** The final tissue ended up being a composite of several versions of his tracings. Magleby explains: "I inked it about three or four times, because there were some things that I wasn't sure about. And then I ended up taking some of the best parts and piecing them together."



6 The photostat shown here would soon be used to create the film positive for the screen printed trap line. Magleby is shown cleaning up the stat with a Rapidograph (he also used an X-Acto knife).

7 On a photocopy of his stat, Magleby indicated his color breaks with marker. BYU Graphics screen print specialist Rory Robinson would then use this large color comp as a guide for cutting the different stencils. If he wants a specific pass to look like a split fountain, he uses Prismacolor pencils over the marker. Eight different inks in six different passes are planned.

8 Here Magleby traced over his basic illustration outline pattern in metallic gold ink (using a Pilot pen). Note also the red arrow; it serves as an indication to Robinson of the main direction of the color blends so that he will know at which angle to affix his stencils to the screen.

color and working with the blends," he explains. "I don't like using photos that much, or halftone illustrations, so it's been just an ideal medium for me."

While screen printing places rigid demands on the designer, it also offers very visceral pleasures, says Magleby. "For one thing, I love the way it looks. Screen printing ink has a richness that offset ink is missing."

Screen printing also offers a few significant technical advantages that offset can't. For instance, when applying the blue and green ink in this poster, Magleby turned the poster on an angle. (Refer again to Figure 13.) *Tip: When screen printing non-halftone art, gradations of color can be specified at any angle, without the risk of causing moiré patterns.* "In screen printing, we can also run as many tight little blends as we want," he adds. "We can keep blends within a couple of inches, whereas on an offset press you usually use a lot more area just to blend; with offset the blends have to be a lot simpler."

All of this logical extrapolation, remarkably, occurs at the very start of the design process. By the time Magleby produces his colored pencil rough for presentation to the client, he has already imagined how he will take apart his illustration in order to have it reassembled with each pass on the screen printing press.

## ISOLATING COLORS

Though it would be the next-to-last ink to be printed, the metallic gold serves as the basic illustration outline; it brackets and confines other blocks of colors. Magleby enlarged his earlier black-and-white rough on a copier and then traced the enlarged image onto tissue paper with a Rapidograph. (See Figure 4.) "Actually, I inked it about three or four times, then ended up taking some of the best parts and piecing them together." (See Figure 5.)

Next, he made a stat of the

inked composite tissue which he cleaned up with a Rapidograph and an X-Acto knife. (See Figure 6.) "This is what would end up being made into a film positive for the [screen printed] trap line," he notes.

Magleby then made a reduced photocopy of the photostat outline and started to render his colors and their various positions, graduations and breaks with great accuracy using markers. (See Figures 7 and 8.) This would soon be given to Rory Robinson, Magleby's in-house screen printing specialist, as a reference guide.

The specific angle of the main gradation of color (approximately a 45-degree tilt) is indicated on this rough as well. (Notice the red arrow in Figure 8.) Magleby then specified colors using Color-Aid swatches. (See Figure 9.) *Tip: Color-Aid's colors are screen printed, not printed with offset lithography. They can be purchased through Color-Aid, New York.*

His primary palette consists of ivory (pass 1), blue and green (pass two), pink and purple (pass three), and metallic gold (pass five). Two additional colors would be applied: a mixture of varnish and gradated black (pass four), which Magleby used to dramatize the diminishing perspective of his illustration; and a semi-transparent gray (pass six) that includes the hash mark highlights which will overprint the entire illustration. The semi-transparent gray run also included the block of copy that appears below the illustration.

Again, straying from the prevailing computer-based aesthetic of poster design, Magleby then hand-lettered the type himself using a Rapidograph pen. The 13 lines of type were lettered in a block format the width of the image. This is the first time Magleby has hand lettered one of the more than 1,000 posters he has designed in his career. (See Figure 10.)

## CHOICE OF PAPER

This image is one of more than 50 posters Magleby has printed in which the background color is black. One primary reason for choosing black is because there is a lot of white on the bulletin

# THRIVING IN A DESIGN OUTPOST

Note to high-powered East-Coast advertising agencies and design studios: Utah is home, sweet, home to McRay Magleby; has been; always will be. So you can quit trying to lure him away from this state—which is not some unbearably barren patch of blandness—because his heart and soul are here.

*This is not McRay Magleby's idea of hell.* "The mountains are just outside my window, and the lake's just down the other way, and skiing is 20 minutes away; there's good ice-boating in the winter, there's great windsurfing and sailing in the summer, good mountain biking and hiking and hang-gliding." Magleby—this singular artist whose exquisite designs have an almost Zen-like sense of order and balance—never has to get away from it all by retreating to splendorous nature. Because he's already there.

*Here is a man who needs lots of room to play.* It's a lovely arrangement. And it's been undeniably great for his design work. Consider the physical isolation of Utah has given Magleby's artistry room to grow; he's apart from the din of the fad-obsessed coasts. Design trends in this country seem to work like a virus, but the dry heat of the Utah desert—and the sheer physical remove—seems to keep that virus at bay.

*Here is a man who needs a lot of room to work.* "I didn't realize that for a long time," says Magleby. "I thought, gee, my career would be a lot better off if I were in New York or Chicago or L.A." He started to figure things out, though, when the first of a long succession of national and international design awards started arriving on his remote doorstep. Perhaps his most notable honor to date: In 1986 he won "The Most Memorable Poster in the World" competition for his "Wave of Peace" poster, created to mark the 40th anniversary of the bombing of Hiroshima. The competition was sponsored by Design International and UNESCO.

When you consider that this tanned, ruddy-cheeked, soft-spoken man has not only remained in Utah his entire life but has held the same job since 1969 (art director of BYU Graphics), you realize that he is truly, honestly not interested in following the beaten path to design fame. That's not to say he's stuck in a rut of his own, though. To the contrary: Magleby has steadily expanded his repertoire of professional activities over the years. Not only does he run his own 10-person department and teach courses at BYU (together more than a full-time job), he's also taken on a full professorship (a ¾ appointment ) at the University of Utah. "Over the years," he deadpans, "I keep thinking, 'I've got to quit one of these jobs,' but I haven't yet." In his spare time he tends to travel all over the country judging design competitions.

Maybe one of these days, he figures, he'll start his own design firm with a few other people. And certainly he'll become involved in further developing the art of screen printing posters. "Another idea I have is doing paintings that could be screen-printed. More of the gallery route, where there would be limited editions, instead of commercial, gallery posters. But that's kind of a hard road, and not many people succeed at that, so I don't know if it would ever pan out, but it's one of the options I've considered."

Chances are, with some time and a lot of room, Magleby will succeed at that, too.

**Other Work** Several of the more than 1,000 posters Magleby has designed while working at BYU. The "Wave of Peace" poster (above) was chosen as "The Most Memorable Poster in the World" in a 1986 competition.

board areas where these posters will hang. "So black really stands out," he emphasizes.

For this poster, he chose a duplex stock, a gloss black finish backed with white (Customcote). His reasons for using a black stock instead of screen printing black on white paper are both aesthetic and practical. "Whenever you screen print a big area like this, it is very susceptible to scuffing, smudging and scratching," he explains. "So starting with the black paper makes the poster a little more durable. Secondly, it has a high gloss; we usually don't use high gloss ink so it makes a nice contrast with the matte finish." *Tip: Starting out with a black stock will also give you a deeper black than can be achieved on a screen-printing press.*

Magleby uses only one other stock to print his posters: Karma (Northwest Potlatch). However, he alternates between white and off-white depending upon the image.

## INTERACTION OF COLOR

One of the keys to the success of Magleby's posters is the innumerable color interactions he achieves on press. Consider Magleby's description of just one type of color interaction in this piece: "Some of the blue and green is printed over the ivory color, and some of it is printed over the black of the paper, so we're getting the blend; plus we're getting a second tone as it goes over black because it's tinting it a little darker." Multiply that interactive effect by the inestimable number of times it occurs in Magleby's design, and the result is quite considerable. "If you measured all the different hues, there must be a couple hundred different ones."

Such consistent application and positioning of colors demands great precision at the screen printing stage. The man who ensures the perfection of the final printed piece is Rory Robinson, BYU Graphics' full-time, in-house screen printing master. Robinson pulls each of the posters by hand, with no assistance. "Rory's more of an artist and a stickler for quality," says Magleby. "He's not so interested in mass-producing things at a high rate of speed. It's kind

of hard to untrain people that are just trained to crank things out as fast as they can."

Robinson, who ran his own commercial screen printing shop before coming to BYU, adds that his artistry has been enhanced by his collaboration with Magleby. "I would have never thought previously we could do what we've done," he says.

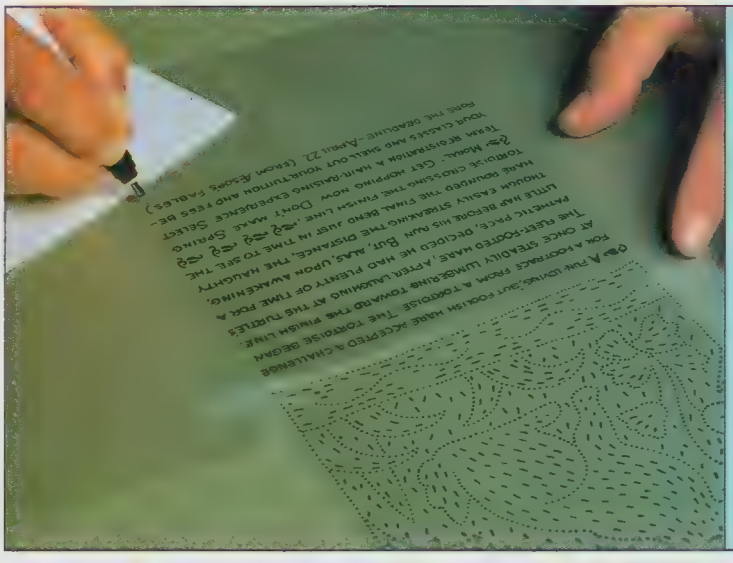
Robinson has assembled a small arsenal of trade secrets and rigorous quality controls, all intended to carefully control the application of inks in blends—Magleby's design calling card. "We get a lot of tours from the trade, tech colleges and high schools that are doing screen printing and they can't believe we're doing blends like these," says Magleby. "Because they haven't been able to control them that well."

Robinson maintains control by choosing the right inks and mixing them himself. *Tip: He makes sure the inks used in a blend (such as the blue and the green) have the same viscosity, so they squeeze through the mesh of the screen simultaneously.* (See Figures 11 and 12.)

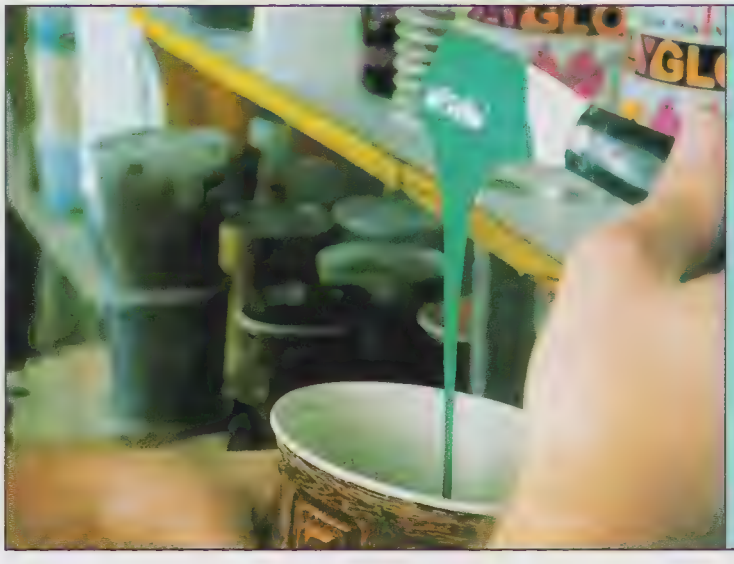
It is interesting to note that Robinson frequently mixes fluorescents (Day Glo Corp., Cleveland, Ohio) into his recipes for inks, though none of the final mixes have an obvious fluorescent component. "Most of your standard inks lack vibrancy," he notes. Day Glo inks, used sparingly, can subtly drum up the intensity of the colors. *Tip: Robinson adds white (approximately 30 percent) to almost all fluorescent colors to add opacity since most of the fluorescent colors are transparent.*

Robinson also points out that he uses a screen table with a bed that rests on an angle. "When you lift up the screen," he notes, "it becomes level." This facilitates the careful application of dollops of color which will be unaffected by gravity until he squeegees over them. (See Fig-

**9** To most closely approximate the colors of the final printed piece, Magleby uses Color-Aid swatches. "What's nice about Color-Aid," explains Magleby, "is that the color on the cards is screen printed, not offset." However, the swatches serve only as approximations since color is hand-mixed on press.



**10** Here, Magleby hand-letters his type on acetate. Note, also, the hash mark patterns in the art above the type. These would serve as a quilt-like pattern when they would be printed (along with the type) in the final, sixth run on the press, with a semi-transparent gray.



**11** Using the Color-Aid swatches as a guide, Robinson mixed the inks to Magleby's specifications. He has no formula and blends inks entirely by eye. One trade secret: He tends to mix fluorescent inks (Day Glo Corp.) with white or into traditional screen printing colors to drum up their vibrancy.

12 At this stage, the stencil had already been fastened to the screen and Robinson began to apply dollops of color. One of his ways of maintaining quality control is to apply inks slowly and deliberately in measured quantities. He uses very slight demarcations on the screen in the margins so that he can consistently achieve the same color breaks in blends.

13 The positions of the alternating blue and green ink on the screen shown here and in Figure 12 result in very deliberate color breaks and gradations. For instance, a single leaf in Magleby's illustration will gradate from blue to green. Note the 45 degree angle at which the color will be applied. This angle will give the artist the kind of gradations he needs for the image.

14 One way Robinson keeps his inks from shifting is by ensuring that both colors of inks have the same viscosity. Also, he uses a professional screen printing table that rests at an angle so that when the screen itself is lifted, it is level. That prevents gravity from dragging the inks this way and that, until Robinson himself squeegees the inks through the screen.

ures 13 and 14.) Also, he makes demarcations with a marker in the margins of his screen to indicate color placement.

With each color pass, Robinson first makes several test prints on newsprint until he gets his blend placements and breaks exactly where he wants them. (See Figure 15.) Another key to his masterful blends is that he does not use too much ink at one time. He will pull five to ten finals before he runs out of ink. Then he will apply more ink, do additional test prints, and repeat the process. (See Figure 16.)

## ON PRESS

While Magleby relies on the Color-Aid swatches to choose color, these are only approximations. Every color is hand mixed. Under Magleby's direction, Robinson mixes a color, tests it on press and shows it to Magleby, who will then either approve or suggest another variation.

Robinson mixed the ink for the first run, the ivory, using white and primrose yellow ink (TW Graphics, Commerce, Calif.) and arc yellow, a Day Glo color that is almost orange. This would be the primary color for the rabbit, the road, the bird and rooftop, as well as the base color for much of the blue green. To ensure there would be no show through, he pulled the squeegee once over the print, then repeated the procedure while the ink was still wet. (For visual reference to this and the other five passes, refer to progressives of the poster in Figure 17.)

The blue and green used in the second pass were also mixed with Day Glo Colors plus white. Robinson also added a little black to slightly gray the colors. Pulling these colors at a 45 degree angle ensures that there will be a variety of different tones throughout the poster.

"I was looking for a way to get a group of leaves to have a nice transition from the blue to the green," says Magleby. "And

it worked out better than printing horizontally." While some of the ivory color shows through the edges, these will later be covered with a gold outline.

In the third pass, pink and purple were placed on press in this order, pink-purple-pink-purple. These were also Day Glo colors mixed with white. While there is no gradated effect, as in the previous pass, with this method Magleby can hit targeted areas of the poster with specific flat colors in one pass. For example, the moon can be pink and the house purple. "We started out on this pass with seven daubs of color, but the colors did not end up where Mac wanted them," says Robinson. "So we cut down the number of colors to four different dabs."

The fourth pass combines a clear base (similar to a matte varnish) with black to achieve a gradated glaze over the edges of the poster. To do this, Robinson mixed approximately two to five percent black with the base. On press, he put the clear base in the center with the black mixture on either edge. "I think it gives it kind of a dramatic effect—like a stage with a spotlight in the center with darker shadows on the edges," says Magleby.

The fifth pass, which is the gold outline, uses a pre-mixed metallic gold ink (Nazdar Corp.). The gold acts as a warm neutral, tying the colors together.

The last pass printed the type and a broken outline drawing in a light gray. The color was mixed with the clear base, white, black and a little bit of orange. Magleby added the broken lines, a staccato pattern of dots and dashes, to create texture. This produces a quilt-like effect, as if the patterns had been sewn together.

The entire process of printing 150 to 175 posters (100 for the registration department and extras for commercial sales) took about three days. Magleby planned to add a sculpted edge to the sides of the posters that would be sold commercially. In experimenting with a form, he first cut a cardboard template, traced the lines on the back of a finished poster, then cut the edge with an X-Acto knife. Pleased with the results, he planned to have a die made for the remainder of the posters.

## ART THEFT

The posters, of course, are a big hit on campus. In fact, their popularity became sort of a problem for a few years. Says Magleby: "They got stolen so fast that they didn't do much good for the registration department. Even though we print 100, they usually only put up about half of those at a time, and then they go around and put the other half up a few days later. But a lot of them are behind glass now, so it's not as much a problem."

Though the tangible benefits of Magleby's exquisite poster campaign would likely be difficult to demonstrat—Do students register earlier? Pay their fees more faithfully?—the collateral benefits are obvious. For one thing, this graphic design "luxury"—and Magleby readily admits that these expensive posters advertising something as mundane as deadlines indeed amount to a luxury—makes BYU, this place for enlightenment, seem that much more enlightened. And the high-profile awards Magleby's posters invariably pick up have given a great boost to BYU's reputation as a significant design center.

But perhaps most significantly, this 15-year campaign has provided added opportunity for the creative growth of an American artist whose name has already gone down in the annals of design. And as he notes, "I think over the years my work would have taken a different turn in style had I not had screen printing here." ■

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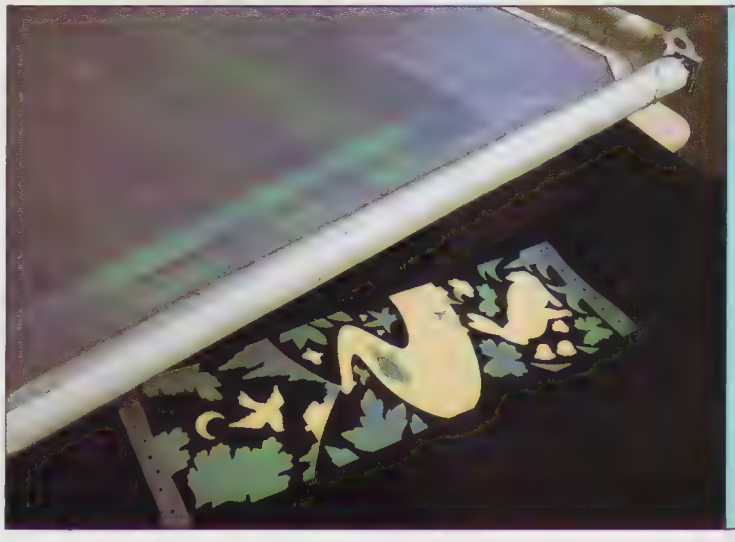
*Simon Dumenco is an associate editor at* Special Report: Personalities *magazine and a regular contributor to* SBSG.

15 With each color pass, Robinson first makes several test prints on newsprint until he gets his blend placements and breaks exactly where he wants them. With screen printing, tight blends and gradations can occur at any angle and within a couple of inches.



16 After Magleby approves the test run, Robinson will pull five to ten finals before he runs out of ink. Then he will apply more ink, do additional test prints, and repeat the process for each color. Here, some of the blue and green is printed over the ivory color, and some of the ivory is printed over the black of the paper, producing different tones.

**17** The progressives of the poster demonstrate how subtleties develop during the printing process. The ivory stage (far left top) seems simple enough, but by the time the blue/green blend is applied, it becomes clear that the ivory serves double duty, both as a independent block of color and as an underpainting for later colors. For instance, take note of the tortoise, which is printed entirely in blue ink; the shell appears darker because it was run over black while the rest of the tortoise was run over ivory (top center). In the purple/pink pass, note how the careful registration of small elements (the pink blotches on the ivory path will become flowers) is crucial (top right). The gradated black was applied next; Magleby's intent was to dramatize the diminishing perspective of his illustration (bottom left). The metallic gold outline serves to bracket colors and hide the rough edges where colors abut each other (bottom center). In the final pass (shown at bottom right without the other colors), a semi-transparent gray was applied to produce the type and the hash mark details that give a quilt-like effect. (Refer to the opening illustration to see the final print.)

# Digital Airbrushing for CBS Sports

***How to create a traditional airbrushed look using PostScript illustration tools.***

**By Linnea Dayton**

Back in the "old days" (pre-1985), Javier Romero remembers being "constantly interrupted" by technology, instead of aided by it. And that cut into his concentration. "If I wasn't out getting more material for friskets, I'd be refilling my airbrush."

But that doesn't mean his transition from traditional to electronic tools over the past six years has been without challenges. Now he must spend a certain amount of time keeping up with electronic technology.

"It's funny," he says. "On the one hand, the computer gives you independence from the constraints of traditional media. But on the other hand, there is an increase in interdependence – dependence on a network of associates who also use the new medium."

And there are other trade-offs as well. "You lose some of the fun of working with your hands. But you also gain the ease of exploration, the freedom to try new and different design approaches quickly and easily," he notes.

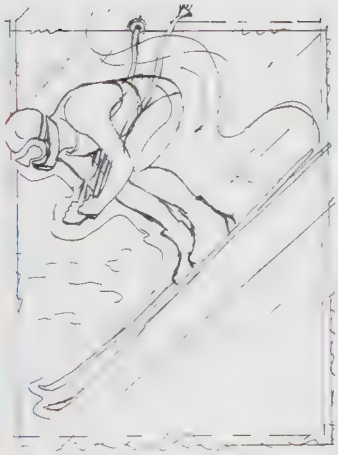
Today, Romero finds that some clients—especially magazines—specifically request computer illustration. On the other hand, there are still some who actually specify that a traditional method be used. In general, though, clients don't express a preference for methodology. For instance, when art director Holly Matteson of the Olympics Unit of CBS Sports called Romero, she was thinking of his fresh, high-tech style as an appropriate choice, not necessarily his methodology.

A series of three posters were needed to be given as gifts for clients, sponsors, employees and affiliates, and Javier Romero was one of three illustrators from across the country Matteson asked to compete for the job. As a graphic designer at *Fortune* and later as assistant art director at *Sports Illustrated*, she had worked with Romero before and knew his style would be a good complement to CBS's television coverage of the 1992 Winter Olympics.

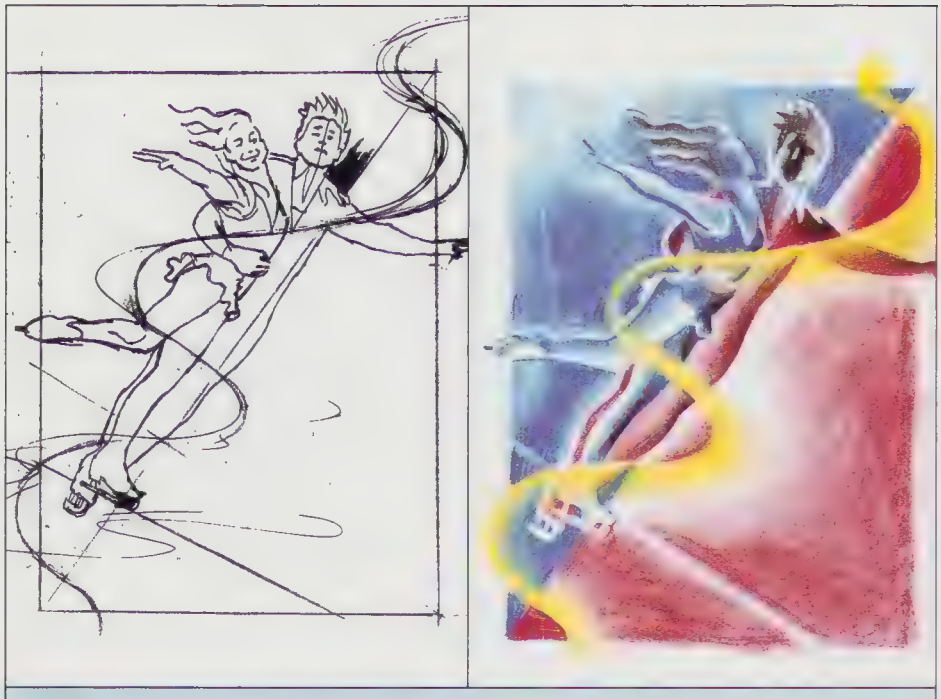
Like the other competing artists, Romero was paid for his initial design work, with the promise of double that fee if the work was chosen. He decided to go all out on his entry, reasoning that even if his design were not chosen for the posters, he would have a nice, finished piece that he could use in some other way.

Romero delivered an illustration of a downhill skier, one of the three subjects Matteson had in mind. The art, drawn on Romero's Mac IIfx computer, had been output as a transparency and produced as a C-print for presentation. The first round of competition eliminated one of the three artists. For the second round, Romero submitted the figure skater illustration, the development of which is followed here. With that submission, it was clear to Matteson

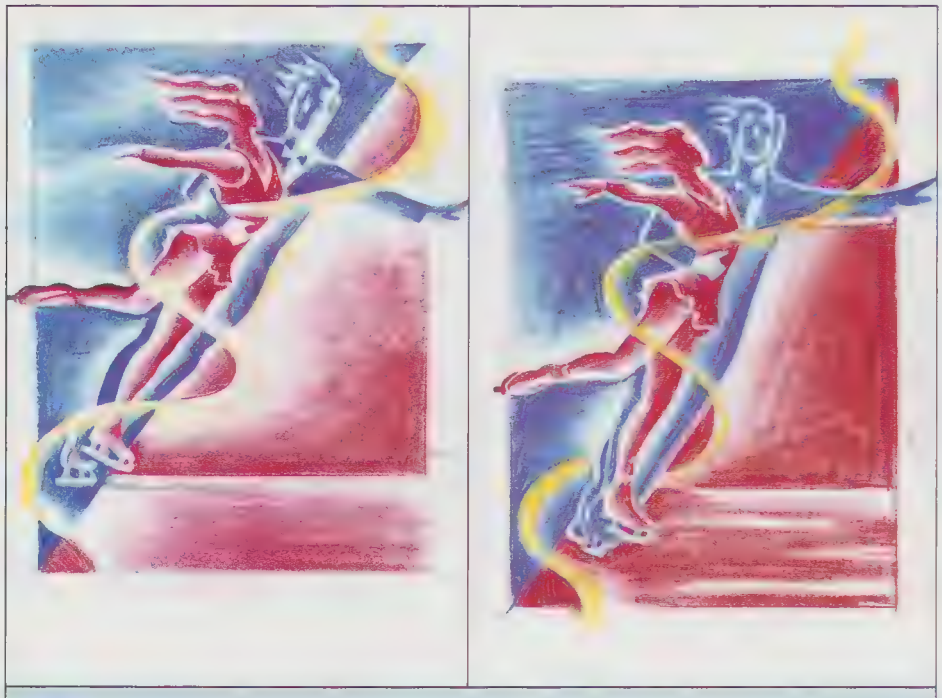
**Winter Olympics Posters** Illustrator Javier Romero created three posters using the same electronic toolbox—including a Mac IIfx with a 19-inch color monitor, a scanner and Adobe Illustrator 3.0—but traditional sketching and color studies (shown above, opposite page) preceded his electronic work.



Photos courtesy of Duggal Color Projects, New York City



1 For the illustration of the skaters—one of the three CBS Winter Olympics posters—Javier Romero started with a pencil sketch based on photo reference (left). Then he sketched in red and blue areas with pencil (right).



2 Because the skating had to be portrayed with technical precision, Romero and art director Holly Matteson worked through several revisions. Although it would make the illustration less dynamic, the ice had to be leveled (lower left) and the dancers' posture adjusted to a more upright position to be technically correct.

and others at CBS that he was the artist for the three-poster project.

## PRECISION AND STYLE

Because the three illustrations for the Winter Olympics' posters had to be fresh, exciting and technically correct, the project was one of the rare occasions when Romero used photo reference for his illustrations. Referring to photos from a figure skating magazine, Romero began the illustration of the skaters by making a rough line sketch and then stylizing it with shading. A tilted swirl suggested motion and forward momentum, which was further conveyed in the way the woman's foot and the man's hand broke opposite sides of the rectangular frame. (See Figure 1.) Matteson reviewed his early sketches and liked the stylized figures but suggested changes to improve the technical precision. (See Figure 2.).

## ONTO THE COMPUTER

With the final sketch approved, Romero scanned it in black-and-white with a Microtek flatbed scanner. Working with a Macintosh IIfx, a 19-inch Radius color monitor and 24-bit video board, eight megabytes of RAM and a 200 megabyte internal hard disk drive, he opened the scanned image in Adobe Illustrator 3.0 as a template and defined custom colors. (See Figure 3.) *Tip: Naming colors and then using these specific names to assign color to lines and fills can be a great time-saver in any Illustrator project. If you want to make global changes in color later on, all you have to do is redefine the composition of the named color, and all elements that have been assigned that color name will change color automatically and instantly.*

Romero began the PostScript illustration by dividing the background into red and blue halves along a diagonal. The blue-filled rectangle was defined as a mask in Illustrator's Paint Style dialog box, so that it would provide a clean edge to contain the other elements. He drew the spotlight in the upper right corner of the illustration, the swirl element that extended from it and the silhouette of the two dancers. (See Figure 4.) Illustrator automatically broke the curve that defined the silhouette to form two shorter curves. *Tip: Setting the Split Long Paths On Save/Print in the Preferences Options dialog box allows the software to break curves if doing so will speed the printing process. If the program breaks a curve that defines a closed shape, each new section of the shape is independently and automatically closed.*

## MASKS AND BLENDS

The spotlight was constructed as a no stroke, no-fill mask and a blend of straight, three point lines, from a short blue segment to a longer yellow one. (See Figure 5.) At this point, Romero was experimenting with including the poster's gold color, shown in his drawing as yellow, in the spotlight and in the curve that defined the swirl. (Later the colors were limited to red and blue.

When he works in Illustrator, Romero uses masks to provide clean outlines to contain blends. Whenever possible, he defines the starting elements for blends as straight lines, because the simpler the line, the more efficient the software can be in creating the blend. *Tip: Blending complex rather than simple curves can cause delays in screen refreshing and in printing.*

## GUIDELINES

The next step was to begin to define the skaters' features with areas of flat color. Romero wanted to be able to use the swirl as a guide for drawing shapes such as the man's shoulder, but he also wanted to simplify his working area as much as possible. He made the upper curve of the swirl a guideline, so that it was visible in the Artwork Only mode, but it was easy to differentiate it from other curves because it appeared as a dashed line. (See Figure 5.) *Tip: Besides providing a nonprinting guideline, guide objects can be used to align elements; choosing Snap To Point in the Preferences dialog box causes objects dragged to within two pixels of a guide to snap to the guideline.*

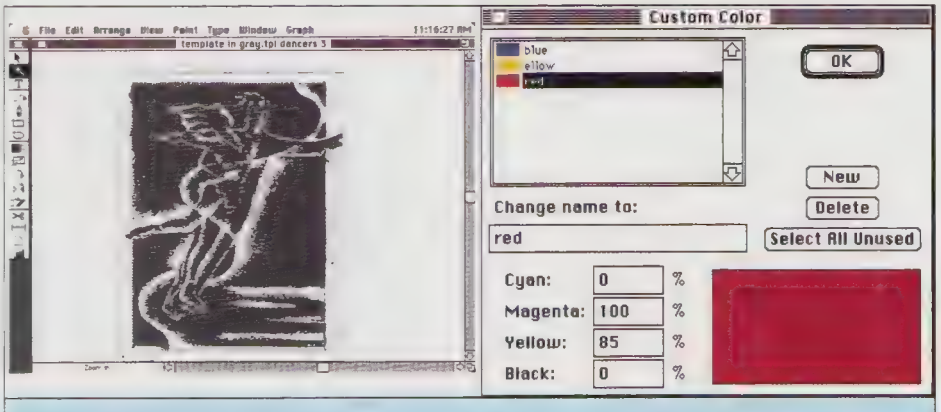
Romero completed the flat red and blue shapes and saved the illustration. (See Figure 6.) "I save my work every 10 minutes," says the artist, to minimize the risk of losing work in case of a power loss or a "multilevel" mistake, since Illustrator provides only one level of the Undo function that allows the artist to correct a mistake effortlessly. *Tip: Aldus FreeHand, another PostScript drawing program for the Mac, offers up to 99 Undo steps.*

## MORE BLENDS

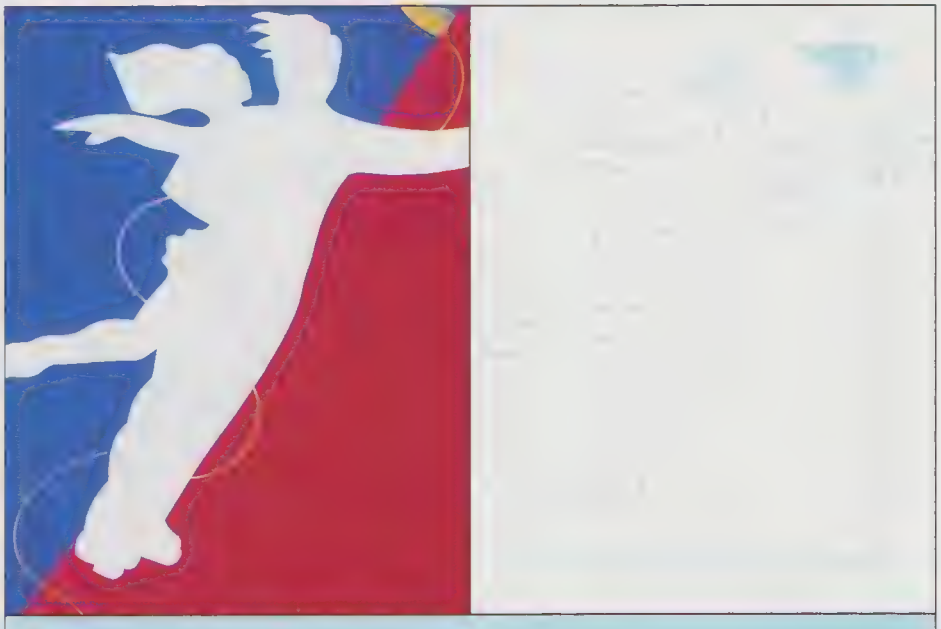
Next Romero began to draw the blends that would sculpt the bodies of the dancers. All blends went from either red or blue to white, and each one was masked either by an already existing flat color shape or by a no stroke, no fill shape created specifically for masking. (See Figure 7.) The Illustrator software automatically calculated how many elements were needed in each blend in order to go smoothly from the beginning to the ending color and shape. Illustrator creates a blend as a grouped object that includes all the intermediate steps the program draws; the two original lines are not included in this group. To make the masking work, Romero grouped each blend object with its original lines and then grouped this new object with its mask. *Tip: If a mask is not grouped with a particular masked object, it masks all objects in front of it on the page, and the Mask option cannot be used again in the file. However, by grouping masks with their own masked objects, you can limit the objects affected by the mask and create many masks in a file.*

## TECHNIQUES FOR EFFICIENCY

As he worked, Romero occasionally used




3 In Adobe Illustrator 3.0, Romero defined a drawing space of 8½ x 11-inches. The scanned image was opened as a template, a visible "background" image that cannot be changed or printed, but that can be traced with the program's pen tool to make shapes defined by smooth Bezier curves (left). Colors were defined through Illustrator's Custom Color dialog box (right).



4 The dancers' silhouette, created by placing a minimum number of control points and adjusting their handles to change the shapes of the curve between points, was given a fill of white and no stroke (left). To shorten the outline path, Illustrator automatically divided the silhouette into top and bottom halves that abutted invisibly at a horizontal line across the figures, as shown in the Artwork Only view (right).

# FROM BOARD TO SCREEN

When Javier Romero began making art on the Mac in 1985, he was already well-acquainted with change. The Spanish-born artist had been a law student and a successful designer and art director in Europe before opening a New York studio.

When he began to use the computer, at first he just played. Experimenting with his Mac Plus, he output oversized line work on a laser printer and then photostatted it down to improve the smoothness of the lines. He specified color for application by the printer as he typically did for conventional mechanical art.

When the Mac II became available, Romero started working with the new machine, outputting his artwork to the very first Macintosh-driven Linotronic imagesetters in 1985 and '86. "It took awhile," recalls Romero, "for service bureaus to get up to speed." Today Romero—whose familiar designs enliven a variety of pieces, from Bloomingdales shopping bags to *Time* covers—generates almost all of his work on the computer.

In teaching at the School of Visual Arts in New York City, Romero noticed that every year the students became more and more computer literate, with samples of electronic design and illustration turning up in portfolios. As his own studio grew—today his team of artists share six computers, five of which are used for graphics—Romero trained experienced graphic artists on the computer and also hired talented young people, whom he found to be generally more open to experimenting with the new technology.

In looking back at outfitting his studio with computers, Romero recalls the transition to using the computer; for awhile, things took longer than they had before. He had to invest time, to start at the beginning by reading and working with a manual. Some of the artists in his studio had taken computer graphics courses before they came to work for him.

## NETWORKING AND ARCHIVING

In December 1989, Romero's studio suffered a terrible loss due to fire. Despite their misfortune, Romero and his associates were lucky in two respects. First, they were able to recover a good part of the destroyed artwork because he had electronic backups on floppy disks at home. (Such duplication would not have been possible for most traditional artwork.) Second, the fire provided the impetus for rebuilding the studio with a network of computers, linked with TOPS networking software. The network was set up to allow the artists to share files and even work on several parts of a single illustration at the same time.

Work in progress is stored at the individual Macs within the network. But when a job is finished, it is archived on 44 MB removable cartridges, a relatively new, portable kind of hard disk drive. Within each of these Syquest cartridges, folders group the files by subject. Each cartridge, plus a binder with printouts of all the files on it, become part of a library of hundreds of illustrations that the artists can use for reference or to help clients identify a particular style they want.

Soon Romero plans to organize the material in the binders overall. Files from the cartridges are also being archived on tape, a less expensive, more reliable medium. Ultimately, Romero plans to archive on CD ROM, one of the next major steps in the new graphics technology.

**Traditional to Electronic** Compare the traditionally airbrushed figure at top with its electronic counterpart below. (Romero created the digitial version for our demonstration purposes; the airbrushed version was actually published.) By outputting an Illustrator file to a film recorder and scanning the transparency, the image's focus was softened, a technique Romero finds eliminates the cold, digital look often associated with computer art.

## NEW OFFICE IN MADRID

Romero, who first came to the United States in 1980 with a study grant from the Spanish government, has opened an office in Madrid to better serve his Spanish clients. Designer Rosadela Gonzalez is managing this "minimum structure" outpost, which is equipped with two Macintosh workstations and such peripherals as a scanner and laser printer. Romero will be communicating with the new office by modem, or more likely by fiber optics lines, which can operate without the interference from noise that still plagues international communication between even the best modems. The new office will be expanded as needs increase.

"With this new technology," explains Romero, "a small office now has a chance to explore international business opportunities that were formerly open only to large design firms."

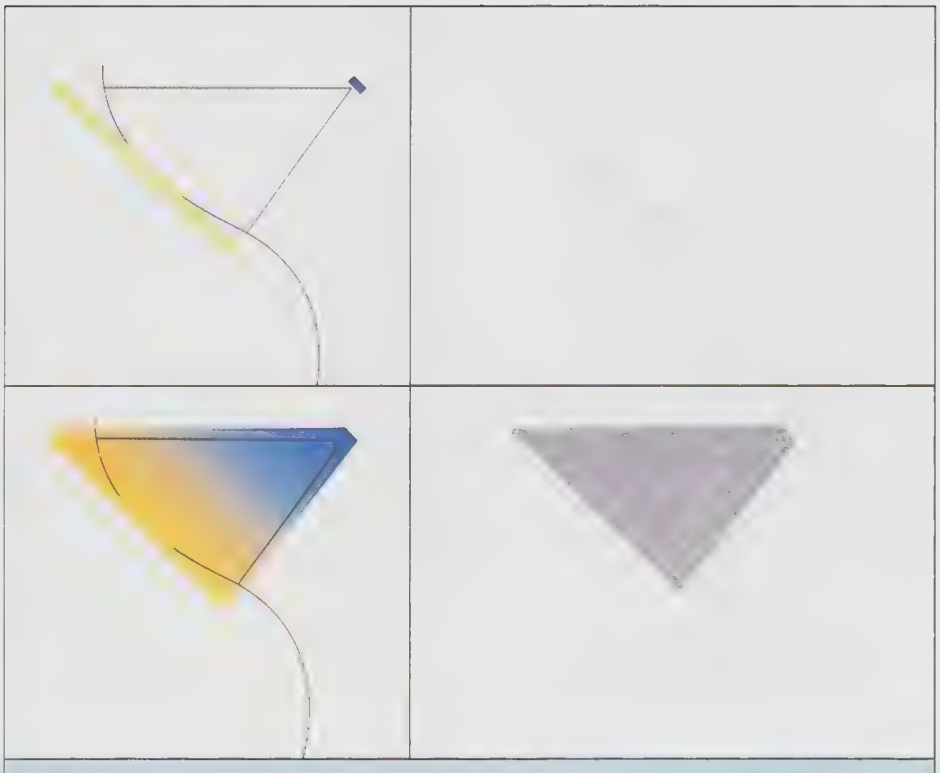
the New Window command from the Window menu to open a second copy of the file so he could have two views of the drawing on screen at once. (See Figure 8.) By resizing the windows, he could set up both an Artwork view and a Preview Illustration view side-by-side. With both versions in view, he could see immediately how the changes he made to the line art affected the illustration. He also worked back and forth between a full-size view and enlargements so he could see the drawing as a unit (at the lower magnification) or adjust fine details. *Tip: In Illustrator, pressing Command-spacebar and clicking while any drawing tool is selected doubles the magnification of the on-screen view. Pressing Command-Option-spacebar halves the magnification. When you release the keys, the drawing tool is restored to operate at the new magnification.*

Another technique that was very important in creating the numerous and sometimes overlapping curves and blends was using the Hide command. Selecting an object (or several objects by Shift-clicking) and choosing Hide from the Arrange menu (or pressing Command-3) hides that object. Hiding objects gets them out of the way so they cannot be accidentally altered or selected and so that other objects can be seen clearly. *Tip: Holding down the Option key while choosing Hide from the Arrange menu hides all objects except those currently selected. In using the Option-Hide command, sometimes you have to force a screen refresh (by changing to Preview Illustration and then changing back to an Artwork view again, for example) in order to fully hide the hidden elements. (The Option key doesn't work with the Command-3 keyboard shortcut.)*

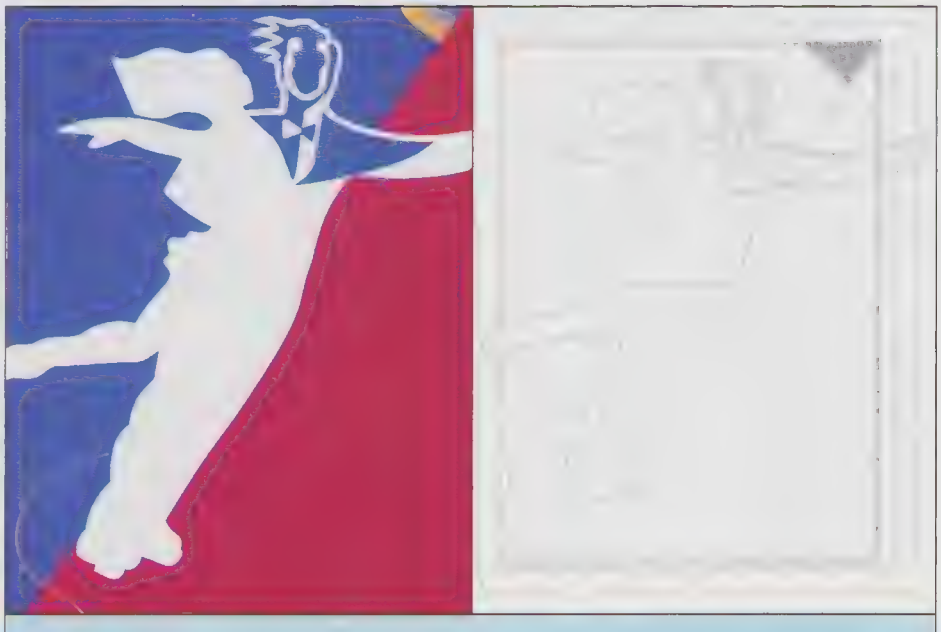
## FINISHING THE ILLUSTRATION

When the dancers were complete, Romero introduced more blends to define the swirl and to add a motion blur. (See Figure 9.) Blends that were based on broad curves, such as the loops of the swirl, were started with thick lines (seven points rather than the one- or three-point lines used elsewhere in the illustration) so that as the elements of the blend spread farther apart at the most curved sections of the line, the elements would continue to overlap, and the background color would not show through.

At this point, in order to draw the spotlight into the swirl, he replaced the original blend of straight lines with one created from curves so that the light would curve seamlessly into the swirl. The numerous

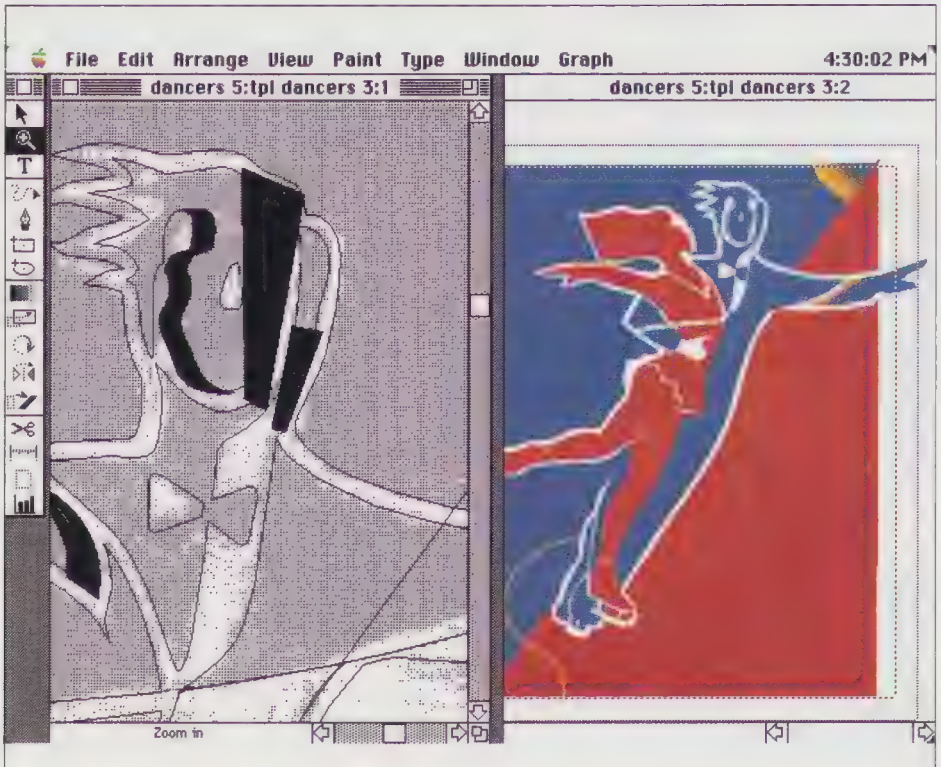


5 The spotlight was constructed as a blend of line segments, masked by a triangle with one curved edge (top left and right). The blend was created by selecting an endpoint on the two original line segments, choosing the blend tool and clicking on the points (below).



6 Details of the illustration were first drawn as filled areas of flat color with no stroke (left). The upper part of the swirl curve was turned into a guide object (shown on-screen as a dotted line) by selecting the curve and then choosing Make Guide from the Arrange menu (right).

7 When Romero had finished drawing the red and blue areas, rather than being defined as strokes, the white outlines were actually the empty spaces where the original white silhouette showed through. The varying thickness added interest to the white outlines.




8 Most of the time Romero worked in Artwork and Template mode, but occasionally he opened side-by-side views of the illustration's line work and finished form so he could immediately see the effect of the changes he made. Working at magnifications up to 1600 percent of the drawing size allowed him to zero in on detail.

blends from red to white and from blue to white produced an effect very similar to airbrushing. (See Figure 10.) The complexity of the illustration, with all its blends and masking, made the completed file more than a megabyte in size, very large for a PostScript illustration. (See Figure 11.)

Romero had been asked to provide an alternative color scheme for the illustration, so he copied the illustration and changed the colors of some of the elements. He saved both files in EPS format. In the end the original red, white and blue color scheme was chosen.

The file was output as a 4 x 5-inch color transparency on a Solitaire 16K film recorder by the Macintosh Imaging Division of Duggal Color Projects in New York. For his presentation to Matteson, Romero had the illustration produced as a C-print at the full size it would appear on the final 2 x 3-foot printed poster. Output time for this file was about one hour.

Romero revised the downhill skier to match the style of the skaters, and then produced the ski-jumper illustration for the third poster in the series. These illustrations were not quite as complex as the skaters, so less time was required to output each transparency.

## PRODUCING THE POSTERS

Matteson completed mechanicals for the poster layouts with phototypeset black type, the new CBS Winter Olympics logo and a gold rule. (Refer to the opening illustration.) The mechanicals and Romero's transparencies were delivered to International Lithographers in Philadelphia, where they were scanned, merged and color separated on a Dainippon scanner system. The technique of outputting the Macintosh PostScript illustration to a film recorder and then scanning the transparency softened the focus of the image and eliminated any cold, digital quality that might otherwise have appeared in the gradations. The final result was an effect almost indistinguishable from traditional airbrushing.

When four-color process separations were made from the scan, the play of colors generated some harsh lines, with neon colors coming through in some areas of the gradations. To eliminate this problem, the files were separated with a reduced number of filters, and the posters were printed with four inks: two custom-mixed colors (CBS Olympic Red and CBS Olympic Blue) and two Pantone colors (gold and black). A varnish was used as a fifth color on all but the white areas. Twelve-thousand copies of

File Edit Arrange View Paint Type Window Graph
dancers 6:tpi dancers 3
File Edit Arrange View Paint Type Window Graph
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**9** The solid, sculpted dancers' limbs were created within the flat areas of color (left). Each blend was then masked within an existing shape or within a new shape drawn especially to contain it (right).

each poster were printed on a six-color sheetfed press on 80 lb. matte-coated Vintage Velvet Dull paper.

## A GOOD INVESTMENT

Romero likes the flexibility the computer provides for design and illustration, but admits that illustrating electronically required a considerable investment of time and a bigger investment of money to produce the two illustrations required to land the Olympics posters job. With computer illustration methods, the production costs consumed most of the fee that CBS Sports had paid Romero for the initial design work. Traditional methods would have required at least as much design and illustration time, but not the expense of producing the transparencies and C-prints. However, once a painting was finished, Romero would have had to start over if even slight revisions had been required, as they were in the case of the downhill skier. With computer art, the revision process was far more efficient. ■

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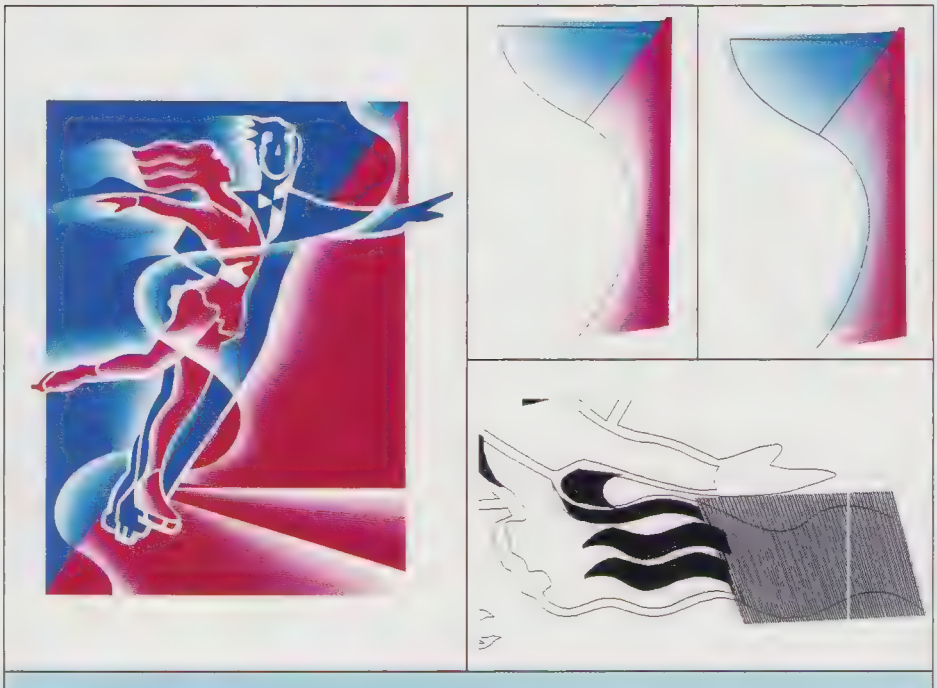
*Linnea Dayton is editor-in-chief of* Step-By-Step Electronic Design.



**10** More blends were added to the background. The spotlight was redrawn and reblended to match the swirl (left and upper right). Like other gradations in the illustration, the motion blurs—for example, the one that extends behind the woman's head—are blends of straight or curved lines contained within masking shapes (lower right).

**11** In defining the ice surface, Romero kept the horizon level but was able to include a modified version of the more dynamic angled design element from his original sketches as well. Numerous masked blends, some of them overlapping, created a very complex file.

# Industrial Paper: Economical, Recycled and Fun!

***Through an insert screen-printed on chipboard, Sayles Graphic Design demonstrates how industrial papers are a "natural" background for many design projects.***

**By Lee Clark**

Mention industrial paper to some designers and you'll probably elicit images of paper towels, toilet paper and packaging materials. But when combined with a little imagination, industrial paper has other—more aesthetic—applications. It is also economical, usually recycled, and can be a great "natural" background for certain types of graphics.

Because industrial paper does not have to be purchased in full cartons like some fine cover papers, it is appropriate for use in projects requiring smaller quantities. The major disadvantage is that industrial paper is not well suited for use in offset printing (try telling your printer you want to run butcher paper through the press!), so you are usually limited to screen printing or flexography for reproduction.

John Sayles of Sayles Graphic Design in Des Moines, Iowa, began experimenting with industrial paper for collateral materials in 1987. One of his first endeavors was a direct mail piece made of corrugated cardboard for Villanova University (Pennsylvania). The finished product measured 19 x 34-inches and was mailed flat—much like a giant postcard.

Success with that project led Sayles to try other applications with the corrugated board, which led to experiments with brown kraft paper, chipboard and single wall corrugated cardboard. (See Figure 1.) Sayles also has used a plastic corrugated product often specified for packaging.

## UNDERSTANDING THE MEDIUM

Use of industrial paper products requires a degree of knowledge of how industrial paper is sold. In large quantities, chipboard and other industrial packaging products are normally obtained directly from manufacturers. In smaller quantities, which would include most graphics projects, these papers can be obtained from many paper merchants. *Tip: Chipboard can be purchased from merchants in 50 lb. units, called "bundles." The number of sheets in each bundle depends on the size of the chipboard sheet. Single-walled corrugated comes in 250-foot lengths (it is rolled up when it is delivered to you), and is generally available in three standard widths. Most sheets of corrugated cardboard can be bought singly, with a variety of choices in size, weight, thickness, and so on.*

Corrugated boxes, which can come in handy for many design projects like the one profiled in this article, can generally be purchased in single units, although sometimes a minimum order is required. Because boxes are a specialty item, Sayles recommends "shopping around" well in advance of the time when the product needs to be ordered.

"In fact, all industrial paper is quite different from fine paper," he says, "and you can really get burned if you don't understand the product and exactly what you're ordering. Because there aren't usually standard 'swatch books' available, I always request a sample of the product before I place an order. This has saved me from mistakes more than once."

Sayles specifies a variety of industrial papers for different reasons. "Sometimes, I want to use a product that will be noticed because of what it is—almost for its shock value," he explains. "Other times, [they] can give a dimension that I don't believe I could capture as well with fine paper. It's a kind of 'planned inelegance.'"

## A 'DOWN UNDER' CAMPAIGN

This informal look or "planned inelegance" was exactly the feeling Sayles wanted to capture in a recent promotion for Central Life Assurance Company of Des Moines. The project is also a good example of how industrial paper products can be used appropriately, and in a cost-effective manner.

Mary Bell, manager of training programs and meetings at Central Life, is in charge of travel incentive programs for the insurance company. Winners of the 1991 incentive contest are eligible for a trip to Australia for a company convention. The audience is small: only 150 agents qualify to win the trip, yet Bell wanted an attention-getting direct mail piece that would inspire agents to work hard and reach sales goals.

Bell chose Sayles Graphic Design for the project because she liked the firm's work and wanted an entirely new look for the Australia convention. "The logos we had developed for past conventions were ho-hum—in my opinion, rather boring. I wanted a total change," she emphasized.

**RUSTIC BROCHURE** In designing the materials, Sayles wanted to avoid the "glossy four-color" approach to the travel brochure and instead developed a more rustic-looking publication, with itinerary information and graphics that would be screen-printed onto 4½ x 7-inch chipboard cards tied together with twine. "I wanted the brochure to feel like someone's private travel log or diary—complete with hand-drawn sketches and impressions," he notes. In addition to the

**Chipboard Insert** To graphically demonstrate the "natural" appeal of industrial paper, Sayles adapted designs from the Australia campaign into this insert printed on .020mm chipboard manufactured by Wisconsin Paperboard Corp., Milwaukee (a Newark Group, Co.), and screen printed by ABC Sign & Display, Des Moines.

An educational insert to Step-by-Step GRAPHICS, 1991 PAPER: Wisconsin Paperboard Corp. PRINTING: ABC 24 Hour SIGN & Display DESIGN: SAYLES GRAPHIC DESIGN, INC.

brochure, he also planned a box to mail the brochure, letterhead, T-shirt with gift box, and postcards.

The logo and illustrations Sayles developed for the project reflected Australian aboriginal art. Instead of reference material, the designer used his own imagination. "I've never been to Australia," he explains. "But I have this idea in my head of what it feels and looks like. Maybe I got my notions from [movies like] 'Crocodile Dundee,' but I knew when I was doing the initial sketches that I was on the right track."

The logo for the campaign, which would be printed on the cover of the brochure and most of the other elements, included the word "Australia" hand-lettered in a primitive, decorative style—a sun-like form with a face, back-to-back alligators and accent graphics. In keeping with the rugged travel log concept, Sayles selected his color palette: khaki green (Pantone 581), a cream color for accents (Pantone 466), and black.

**VIDEOTAPE MAILER** Sayles' idea was to mail the "brochure" to Central Life agents in a corrugated cardboard box, which he also planned to screen print with the logo and graphics he developed. The front panel of the box would contain a continuous scattered pattern made up of elements from the logo and other graphics. The designer selected an existing box—a standard videotape mailer—since it was the right proportions for the brochure he had in mind. (See Figure 2.) The dimensions of the videotape mailer are 8½ x 4¾ x 1 3/16-inches. *Tip: Dimensions for packages indicate the length, width and depth (in that order) and always refer to inside measurements.*

The use of an existing product had the dual advantage of immediate availability and lower cost than a custom-made container. The boxes were ordered from Elwood Industries of Chicago and shipped flat to Sayles for screen printing. The per unit cost of the blank video boxes was less than 50 cents. *Tip: A similar, custom-made product would easily have cost four or five times as much, due to the expense of dies*

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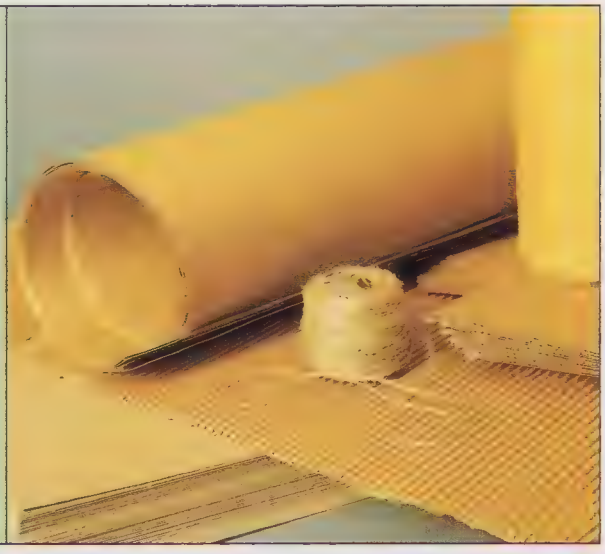
**'Down Under' Campaign** When commissioned to design a travel incentive program for Central Life Assurance Company's convention in Australia, Sayles Graphic Design created a 32-page travel brochure using chipboard mailed in a corrugated box normally used to send videos. Also part of the campaign were chipboard postcards, a corrugated giftbox with T-shirts and letterhead.



**1** Industrial papers, shown here in their "raw" form, are a recycled, inexpensive alternative to fine cover papers. Common papers used in graphics include (left to right): chipboard, single-face corrugated, 70 lb. kraft paper, roll of single-face corrugated, and flat corrugated boxes. For this project, Sayles used twine for binding.

**2** Sayles bought boxes for shipping videos (note the "EZ Video" pinhole logo) for use in the Australia project. The boxes are sold as white over kraft (white outside; natural color inside), but Sayles turned the boxes "inside out" for this project.

**3** The designer fabricated a comp for the brochure and mailer box with the actual video box and chipboard stock. He used Pantone paper, cut to the desired shapes and Rexel Cumberland colored pencils (Derwent Studios) to give an approximation of the style so the client could approve the graphic direction.

*needed to make the boxes, and the low quantity required.* Because the boxes were only available in white over kraft (bleached paper outside, natural cardboard color inside), Sayles turned the boxes "inside out," with the kraft paper on the exterior.

While Sayles initially wanted to carry the natural feel of the corrugated into the brochure, he felt that using conventional cardboard would yield a book with too much bulk. Instead he opted to use .022-inch chipboard. The book would be bound with twine—which was purchased at a local hardware store—and tied by hand. Also included in the mailing would be several chipboard "postcards" that the agents could either save or send.

**CORRUGATED T-SHIRT WRAPPER** In addition to the brochure and mailing box, the other components of the campaign included letterhead (printed offset on French Speckletone), and an "amenity" or gift, given to winning agents upon their arrival in Sydney, Australia. Sayles suggested to Bell that the amenity be a printed T-shirt with related graphics presented in a box with a matching gift enclosure card. The second box would be screened with the same continuous, scattered pattern as on the brochure box. The shirt would be "dressed up" with a wrap of single-wall corrugated, a material usually used for packing which lacks "backing" on one side, making it pliable. The single-wall material would be wrapped around the shirt and held in place with screen-printed (chipboard) bands. Sayles obtained the blank T-shirt boxes from Pomerantz Diversified Services, a packaging wholesaler in Des Moines. The single-face corrugated was ordered from a local paper merchant.

## COMPARING COSTS

While Sayles' primary objective in specifying chipboard for the Australia project was to capture a coarse and natural feel, the use of industrial paper presented an additional advantage—the cost is generally lower than fine (cover weight) paper.

To complete the Australia project, Sayles needed 134 sheets of chipboard. Since a bundle contained 116 sheets, it was necessary to purchase two bundles. At less than $20 per bundle, paper cost for the project was under $40. To produce the same project on a premium grade, 80 lb. cover stock, the same number of sheets would have been required. Depending on the region where the fine paper was purchased, the paper could reasonably be expected to cost between $75 to $100. If the merchant was



Photos by Bill Nellans

# PRODUCING THE AUSTRALIA INSERT

To give *Step-By-Step Graphics*' readers a sense of how Sayles Graphic Design produces work on industrial paper, John Sayles and staff adapted one of the "Australia" project illustrations as an insert for this issue.

Just as he did with the original Australia project, Sayles began with a pencil sketch of the insert. Designer Joe Bustad then inked the three colors on materials at hand, including acetate and vellum. He worked at 150 percent of reproduction size. (See Figure 1.) Bustad then made a stat to size. Since the inserts were to be printed 12-up, Bustad photocopied the image 12 times and positioned the copies on a board in preparation, then had three pieces of film made, one for each color. (See Figure 2.)

The printing process for the original project and the insert, both printed by ABC Sign & Display, differ in one small but important factor. While solvent-based inks were used for the original project, the insert has been printed with ultraviolet (UV) inks. UV inks utilize ultraviolet radiation for curing. When the ink is exposed to UV light, the liquid ink is changed to solid. This polymerization process is very rapid; the coating is cured in less than one second. The curing process for solvent-based inks is much slower and requires printed work to be "racked" (placed in a framework for drying), making the process less efficient, as well as requiring more space in the production area. Because 50,000 inserts were being printed, the UV inks would speed the process. An additional UV ink advantage is less printing shop air pollution, because UV ink systems contain no solvents.

The inserts were printed on sheets of 28 x 48-inch, .020 chipboard, provided by Wisconsin Paperboard Corp., Milwaukee (a Newark Group Co.). Including press and binding waste, approximately 4,800 sheets were needed. As with the initial project, printing was done starting with the lightest color (cream), and finishing with black. (See Figures 3 and 4.)

**Figure 1** Master art for the insert was prepared at 150 percent of the finished size. Here Bustad inks the artwork for the khaki screen, one of three colors including cream and black used on the insert, which would be screen-printed 12-up on sheets of 28 x 48-inch chipboard.

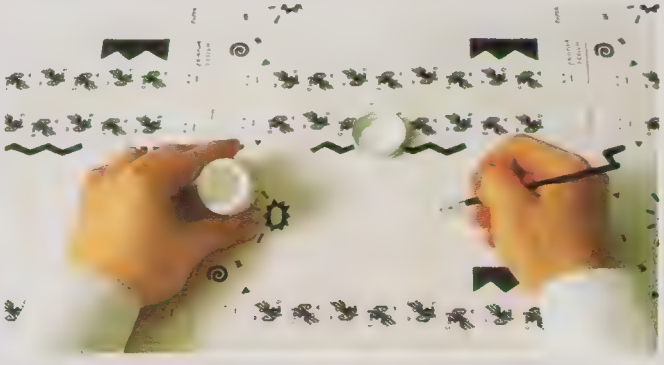


**Figure 2** A photostat of the master art was made to size, photocopied 12 times to save production costs, then mounted on board. After Bustad cleaned up blemishes on the photocopied art with Pro White, three pieces of film were created, one for each color.

**Figure 3** The inserts were printed on .020 (thickness) chipboard on ABC Sign & Display's semi-automatic screen printing press. A 390 lpi mesh screen was used. Often, squeegee pressure and/or ink viscosity has to be adjusted to accommodate the unpredictable irregularities of the industrial paper.

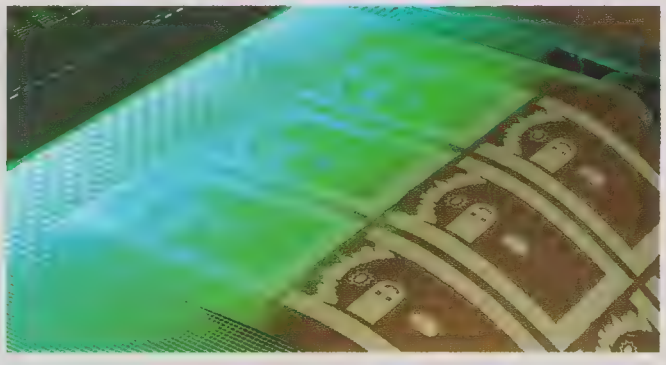
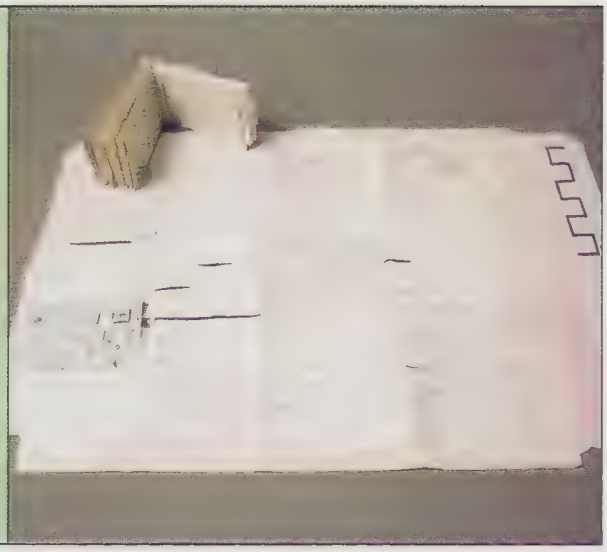


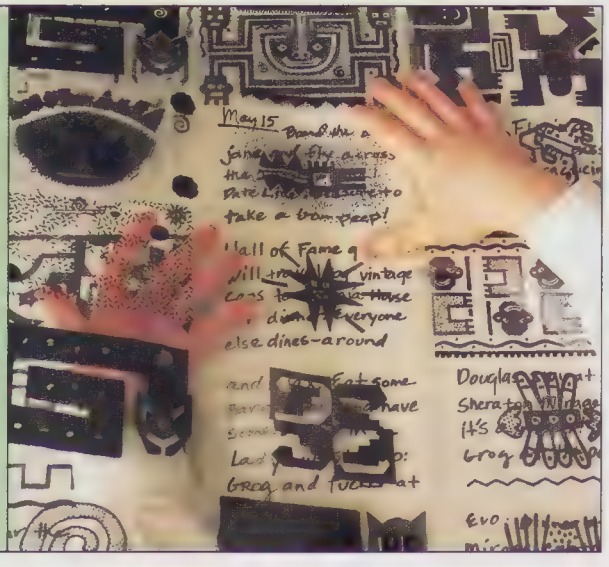
**Figure 4** As in the Australia project, the lightest color, cream (Pantone 466) was printed first. The ultraviolet (UV) inks used for screen printing the insert use ultraviolet radiation for curing. When the ink is exposed to UV light, the coating is cured in less than one second, allowing the sheets to be stacked.

4 A pencil layout of the brochure was developed (upper left), then the imposition was determined to allow maximum use of the chipboard sheet. Sayles drafted copy and illustrations on butcher paper, which became the "blueprint" his assistant Joe Bustad followed during the inking process.



5 Using waterproof India ink (FW) on .005 wet media acetate (Grafix), Bustad developed three overlays—one for each of the three colors to be printed. Here, he inks the black overlay with a brush and Speedball lettering pen and tips (circular tips, various sizes).

6 After all three acetate layers were complete, Bustad checked for accurate registration and correct color breaks. Approved acetates were given directly to the screen printer. Screens were burned directly from the acetate, eliminating the need for photographic film positives.




unable to sell less than a full carton (which is often the case when the paper desired is not a stock item), this cost might be closer to $275 to $325.

The cost of offset versus screen printing is a little more difficult to compare accurately. Many factors enter into the pricing of printing: complexity of the job, amount of prepress required and size of the print run. The estimate for this job, which would include screen printing the videotape mailers, the brochure, postcards, T-shirt (including the cost of the 150 shirts), wrapper bands for the shirts and T-shirt box, was about $3,000.

**PRESENTING THE COMP** Sayles developed a full scale comp for Bell's approval, using a sample video box and Pantone paper cut to the appropriate shapes. To suggest the 32-page brochure, he presented the cover and a representative inside spread (cut from Pantone paper) on a chipboard dummy. (See Figure 3.) He envisioned handwritten copy inside the brochure that would reinforce the impression of a travel log and tie in with the rustic illustrations. A comp for the letterhead, made of Speckletone natural with cut paper graphics, was also presented. The stationery used the logo and same pattern as the front of the boxes, but it would be printed dark green and black on the edges and gray in the center.

Bell approved the idea with no modifications and gave the OK to develop copy and camera-ready artwork. Sayles contacted freelance copywriter Wendy Lyons, who developed the copy to read like a future-tense travel diary, using Aussie terms (a glossary card was also developed).

## PRODUCTION

The letterhead was needed in advance of the other materials in the program, so Sayles set to work to finalize this art first. The comp he had developed for Bell's approval was a refined one, and few adjustments were required before it was ready to be taken to camera-ready art. Since the Australia "logo" would appear on all elements of the program, Sayles prepared the art for the logo at approximately 200-percent size. The letterhead art was prepared in the conventional fashion for offset printing: color breaks were indicated on a tissue overlay. Ten-thousand pieces of stationery were printed by Acme Printing of Des Moines. Bell needed this much letterhead because she planned to use it throughout the duration of the contest.

**ART FOR THE MAILER** Sayles then began to pencil out the rest of the program, so that

his assistant, Joe Bustad, could complete the production for the various elements which would be screen-printed by ABC Sign & Display in Des Moines. Beginning with the mailing box, Sayles gave Bustad a tight pencil drawing along with the approved comp as reference for color breaks.

Bustad then inked the illustrations on wet media acetate, using FW waterproof India ink. Art for each color was inked onto a separate piece of acetate, as required for the screen printing process. Any errors could be erased from the acetate with a Koh-I-Noor Rapidograph eraser and reinked, but this also meant that completed art needed to be handled with care to avoid damage. Bustad used Zipatone as well as ink to define areas requiring solid color. Registration marks were applied to the finished sheets of acetate, along with instructions to the printer regarding the order in which the colors were to be screen-printed (lighter colors first; black last to "trap" the art). *Tip: If you are screen printing a job, you can eliminate the need for photographic film positives—and save money—by working to size on acetate because screens can be burned directly from these acetate sheets.*

**DRAWDOWNS** At this point, Sayles requested a "drawdown" of ink on both corrugated and chipboard to compare the colors with the (offset printed) letterhead. Although Sayles has worked for several years with ABC Sign & Display, he requests a drawdown for all projects that use industrial paper to test for opacity, color density and contrast, as well as suitability of the paper to the project. *Tip: If you are having trouble with color application, you may want to suggest to your printer the use of a varnish or white "undercoat." Because of the porous nature of industrial papers, when using solvent-based inks, a sealing coat is sometimes desirable for maximum color density. It is less expensive to make such decisions during a drawdown phase.*

**BROCHURE ART** The final art for the brochure was prepared in two large sections, using the same materials and techniques as for the box. The twine binding method meant the brochure would consist of single pages, so it was not necessary for art to be prepared in traditional signatures. Sayles developed two sets of pencil roughs for Bustad to follow: one with illustrations and one with copy that Sayles did by hand. (See Figures 4, 5 and 6.) A copy of the penciled text was given to client Mary Bell to proofread before Bustad began inking the copy. The sheet size of the chipboard (22½ x 34½-inches) was ample enough to allow art for the amenity card and shirt band to be included on the same run as the brochure.

**7** Brochure press sheets were printed three colors over three (three passes on one side and three on the reverse side). Here, all three colors are down on the front side of the press sheet. After each color goes down, Sayles checks color accuracy and registration.

**8** The binding process for the brochure was simple, but time-consuming. Sayles' staff rigged the office paper-punch to accommodate the Australia piece and took turns actually punching holes in the chipboard.

Although the "rustic" look of the graphics made precision less essential in the finished art, the inking/refining process for the entire program took Bustad over 60 hours. This was in part due to the fact that six separate pieces of art were being developed (three for each side to be printed). After the six acetate originals were approved by Sayles and proofread one last time, they were given to the screen printer with the color sequence specified.

## PRINTING

Screen printing on industrial paper can pose challenges different from those encountered when printing on other substrates, says Brent Logan, vice president/general manager of ABC Sign & Display. "With some industrial products such as corrugated, there are surface irregularities. We might have to adjust squeegee pressure and/or ink viscosity to accommodate these irregularities," he adds. Corrugated can pose an additional challenge on longer runs where dust can accumulate and make it necessary to clean the screens occasionally.

ABC Sign uses a 390 lpi mesh screen in its semi-automatic screen printing press. Because of the very high tension of the screen, when printing such items as premade boxes—where there is a crease or score for folding—a break in the printed image can occur. "We can print the hills but not

the valleys," explains Logan.

**THE BOX** The video box was the first component in the Australia project to be printed, and Sayles personally approved each color. The process for the box went smoothly, except for coverage in one small area. Because the videotape boxes were "stock," an identifying product name ("EZ Video") used by the manufacturer was on the "inside" (which Sayles was using as the outside) of each one. This logo appeared as a pattern of small pinholes on the surface of the corrugated box and made consistent ink coverage impossible in that small area. To circumvent the problem, Sayles planned to apply mailing labels directly over the spot where the coverage was broken.

**THE BROCHURE** Next, the 32-page brochure was printed. It included 10 full-page, three-color illustrations, along with two- and three-color pages with graphic and handwritten type.

The printing process was similar to that used for the box. Because the box was a

# FUN, FAME OR FORTUNE

John Sayles and Sheree Clark, owners of Sayles Graphic Design, have a simple business philosophy based on these criteria: fun, fame or fortune. Explains Sayles, "It's either got to have the potential of winning awards or being recognized in some other way, be fun, or bring in enough money to allow us to spend time on the kinds of projects we like to do."

Sayles and Clark, who report that their firm has been profitable since it was formed in 1985, believe their success comes from liking what they do, as evidenced in their business goals, along with a strict division of responsibilities. Sayles, a designer by training, handles all creative; Clark, who holds a bachelor's degree in retail and a master's degree in higher education, is responsible for managing the firm and developing business. "It is a black-and-white split," says Clark. "The only decisions that we must consult each other on are hiring and firing and major capital expenditures. That's why it is so wonderful: I do what I do and then report to him after it's done and the same with him."

Because it is a small office, however, lines do cross. Clark will suggest ideas for projects and in turn Sayles will suggest business strategies. With one full-time employee and two interns, this firm has room for that kind of flexibility. Several years ago the office had six full-time staffers, but Sayles found himself being a manager instead of a designer, and he hated it. "I can get myself to do something over for the tenth time because I know it has to be done, but to get a young designer to do that is very difficult," he says. So as employees left, they were not replaced, and both Sayles and Clark are happier. "Joe Bustad [Sayles assistant and the firm's only full-time employee], Sheree and I and the interns are producing more work now than when we had six people, and it is more profitable for us," he adds.

While much of the firm's business has been generated within Iowa, it also works with firms in Chicago, New York and San Francisco. Instead of direct mail or blanket mailing, Clark targets a market or a particular type of business that the firm thinks it may like to work with. "I have changed my attitude about positioning our business," says Clark. "I used to feel I really wanted to promote us. Now I feel I want to find us matches. While some clients are very profitable to work with, they are a pain. And I'm realizing that there is a cost associated with that: wear-and-tear on the staff. I would rather have an account that is not as profitable and is a joy to work on than one that pays a lot and rips up our staff."

The business the firm develops varies by market, but the goal is to work with companies who have the potential for interesting work. "Examples of firms we like to work with are printers or anyone in the travel and entertainment industry," explains Clark. "These seem to be a natural fit with our style and the work we enjoy doing. While we do some annual report work—and everyone knows the profit margins—it's really not a goal for us because they are sometimes not joyous projects."

**Combining Techniques** For these materials promoting college sororities and fraternities, Sayles screen-printed the poster, sweatshirt and totebag, and used offset for the direct-mail piece.

For some time, the goal at Sayles has been to back off the day-to-day "hot-job-of-the-day" mentality, as the firm refers to jobs that come in and go out quickly. "Instead of doing 400 jobs in a week, we're picking and choosing now, especially spending more time on particular pieces," says Sayles. The goal is obviously to impress clients so they come back for more. Clark and Sayles feel it is especially important to sit down and talk to clients in a relaxed atmosphere. "In the past, we would sit down with them, but they could tell we were stressed, that we were cranking out the work. And I think we may have lost some people that way," he adds.

While the firm has not ruled out adding more employees if necessary, Sayles relishes being back at the board, and Clark likes the flexibility of turning down a job that doesn't meet those ever-important criteria: fun, fame or fortune.

stock item and already diecut, it was not practical to design a full-bleed image for it. Likewise, there were no bleeds in the brochure. Had there been areas where a bleed was desired, these would need to be considered during the imposition of the final artwork: Sayles would have needed to allow extra trim space around these areas.

The brochure was printed three colors over three (three passes on one side, and three on the reverse side), starting with the lightest color (cream), and finishing with black. This meant that Sayles would be press-checking the brochure no fewer than six times: once for each color, for each side. While six-plus press checks may sound excessive, Sayles insists that it is a critical step in the process. Along with checking color accuracy and registration, he inspects for places where the screen has filled in, breaks in line type or art and color consistency. (See Figure 7.)

The printed press sheets were delivered from ABC Sign & Display to Acme Printing Co. in Des Moines for trimming. *Tip: Contrary to what you might expect, when trimming a thicker material like chipboard, it is best to use a slightly dull blade. A brand new (sharp) blade could be damaged due to the thickness of the board.*

Drilling for the twine binding was done by the Sayles Graphic Design staff on a traditional paper punch to save money and time. (See Figure 8.) Finally, the brochure was bound and hand-tied with twine. This step proved to be more involved than originally thought: After binding the first book and testing the results, the Sayles staff found the binding to be too taut to allow the book to open properly. Finally, a system was developed by using a three-foot-long (½-inch-diameter) dowel rod. Six books at a time were butted against the rod, and twine looped around it (three times for each hole) and into the punched holes. Looping the twine around the dowel rod was a way of ensuring uniform "slack" required for the binding to work properly. On the third time around, the twine was pushed throughout the hole with a flathead screwdriver. Then a simple knot was tied on each piece of twine to secure it, and the bound brochure was slipped off the rod. (See Figure 9.)

The other campaign elements—the second box and the T-shirt—were printed shortly after the initial runs. (See Figure 10.) Sayles took already completed elements with him on each press check to ensure consistency. While no significant adjustments were required when going from different corrugated products to chipboard, very often in such projects ink colors will need to be adjusted to compensate for absorption levels and other factors. "I'm lucky in being able to work closely with Brent at ABC," says Sayles. "Along with his commercial art background, he has a lot of fine art experience, and thus an eye for color. He troubleshoots for me and is able to offer color correction ideas and alternatives," Sayles adds.

Both Sayles and Bell are pleased with the final results. "It was something altogether different, and I liked it," says Bell. "People hadn't seen this kind of promotion before and I expect they will use it as a keepsake. It also worked out very nicely as a container."

Adds Sayles, "When I first started using industrial products in lieu of fine paper I did it for a number of reasons. It's unexpected, which helps make it effective; the material itself lends a feel to a piece that cannot be achieved through traditional means." Asked what industrial or other mediums he might experiment with in the future, Sayles is quick to respond. "Any product has potential for use in collateral material. Right now I'm working on a poster and pocket folder—both made out of sheet metal. If a surface can be prepared to accept ink, I'll make a publication out of it!" ■

**9** A dowel rod provided uniform "slack" for the twine binding. The twine was looped around the dowel and through the holes. The final loop was pushed through using a small flathead screwdriver. The ends were tied off by hand with a single knot then removed from the dowel.

**10** To "finish off" the look of the amenity gift box, a sheet of single-face corrugated was wrapped around the screen-printed Australia T-shirt. A band with the Australia graphics, which was printed with the brochure, was wrapped around the corrugated. The box was then tied with twine and the card (left) was attached.

*Lee Clark is a Iowa-based freelance writer.*

# Greetings with Simple Die-cuts

***Relying primarily on die-cut shapes, Nicole Reslink designs playful holiday cards for the Museum of Modern Art.***

**By Susan E. Davis**

As Henri Matisse discovered late in his life, there is aesthetic pleasure in cutting paper into simple, expressive forms. Like a sculpture carved from stone, there is a dimensional quality to a design cut from paper that can rival any other graphic medium. And unlike other techniques, cut paper designs can be duplicated easily through die-cutting and can be less expensive to produce because a message can be easily conveyed without color.

These are amongthe reasons Stratford, Conn.-based designer Nicole Reslink has been using die-cuts for more than 15 years. "I don't draw very well," admits Reslink, "so one of my ways of bluffing around that is to work three-dimensionally. I've gotten away with that for years." Which explains why die-cuts frequently crop up in both her corporate graphic work and the seasonal cards she designs for the Museum of Modern Art .

Reslink credits her inspiration for die-cuts to two sources—one theoretical, one practical. The first was a course at Pratt where an instructor opened a door to the possibilities of 3-D design. "The instructor was trying to get us to imagine all the points that are out there in space," remembers Reslink. "It's really an unimaginable number. The point is you can choose any of them. That just blew my mind. I was thrilled with the kind of possibility that implied."

The practical influence on Reslink was a job she took in package design early in her career. "I got used to cutting up paper," she notes, "and seeing what different planes would do when you have layers pass each other or how one kind of fold affects the surfaces and the kinds of relationships you get. That really appeals to me."

## DIMENSIONAL SIDELINE

It's no wonder that when asked to create a Christmas card for her employer in the early 1970s, Reslink's design featured a die-cut. Undaunted when the company claimed it was too complicated and costly to manufacture, she ended up selling her "Noel" card to the Museum of Modern Art. It sold out almost immediately. Since then, she has created seven other die-cut cards for the museum, one of which was also produced as notepads.

This sideline has also been fairly lucrative. Reslink remembers that one year, when royalty revenues from several of

**Die-cut Greetings** Nicole Reslink's whimsical die-cut holiday cards for the Museum of Modern Art rely solely on shape and form to convey their message. Six of the cards she has designed over the years include: Noel, White Animals, Rock Star, Doves, Reindeer and Three Stars. (Photos by Roy Gumpel.)

her designs were added together, she made a very tidy sum—about a quarter of her entire income. But one year, she hastens to add, she made the equivalent of an average design fee for just one design.

Coming up with ideas for these cards can often be an elusive game. "Sometimes I work on a design for days and nothing happens; other days I get a lucky flash," relates Reslink. When that happens, she sends a comp of her design to Marisa Scali, the paper products manager in MOMA's marketing division, who submits it to a committee that selects the museum's holiday card designs.

After a design has been approved, Reslink signs a contract and receives a modest advance against royalties and then goes back to her day-to-day graphics business. "It's great when the royalty check shows up, and I haven't worked on it recently," states Reslink.

Reslink showed *Step-By-Step Graphics* how she incorporated die-cuts into four of the greeting cards she has created for the museum, including one that will preview this season.

## DESIGNING WITH Z FOLDS

One of the basic foundations for many of Reslink's greeting cards is a basic Z fold. "It's simple physics," she explains. "If you fold a single piece of paper in a zig-zag fashion, it will stand very stably on its edge. It will continue to be stable no matter what you do to the other three sides. Then you can cut the paper above the Z fold in an infinite number of ways."

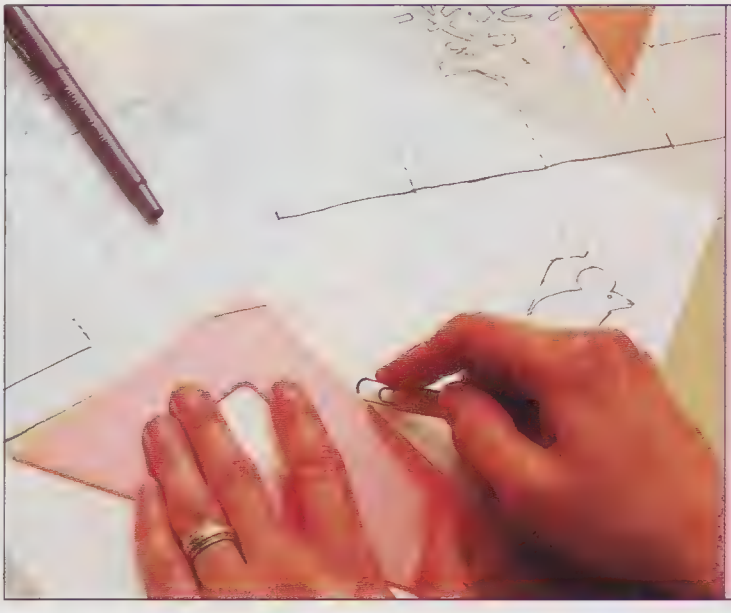
*Tip: To create a basic Z fold, cut a sheet of 8½ x 11-inch paper lengthwise so it measures 4¼ x 11-inches. Fold it into thirds so that one end folds over the front of the sheet, and the other end folds over the back of the sheet. This forms a Z configuration that is stable and can be cut into any design. More folds can be added on a longer sheet.*

Envisioning a Z fold card with "a forest of antlers," Reslink began drawing reindeer with an HB pencil. "I didn't really know how I was going to do the reindeer body part," she explains. "I look for the simplest form that will make my message clear." She then traced the outline she liked best four times in a row on tracing paper with a Rapidograph, adding dotted lines for the folds.

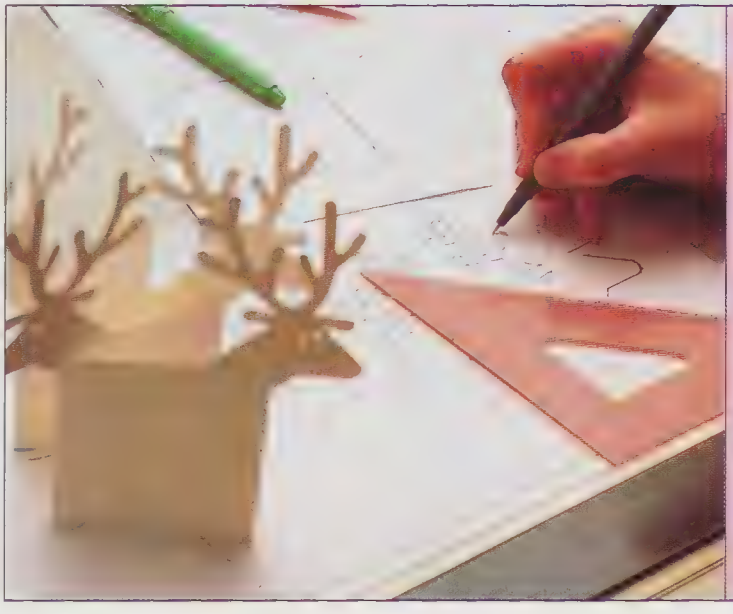
On a sheet of ledger bond paper, she noted where the folds fall and scored the paper along the dotted lines with a large paper clip held firmly against a straightedge to create the folds. (See Figure 1.)

"A paper clip with a wad of tape around one end is the best tool for scoring a piece of paper," advises Reslink. "If you run the soft, rounded metal edge along a straightedge, it bends the paper fibers underneath it just enough so that when you fold it, you get a very clean edge." *Tip: The tape makes the clip easier to hold and keeps the pieces of wire from shifting.*

After tracing the drawing on the paper over a lightbox,



1 Nicole Reslink envisioned a Z fold card with "a forest of antlers." The Z fold works according to basic physics: If a piece of paper is folded in a zig-zag manner, it will stand stably on its edge (top left). After drawing a number of simple reindeer shapes, Reslink traced the outline she liked best four times in a row on tracing paper with a Rapidograph, noting the folds with dotted lines (top). On a sheet of bond paper, she marked where the folds fall and scored the paper.



2 After cutting out a rough comp that pleased her, Reslink refined her drawing. Using an HB pencil, the artist traced the lines over a lightbox onto a sheet of tracing paper, then cleaned up the lines with a ballpoint pen. When the comp was approved, she would create a mechanical with a Rapidograph on Trazon Vellum, a semi-translucent 100 percent rag paper.



Photos by Roy Gumpel

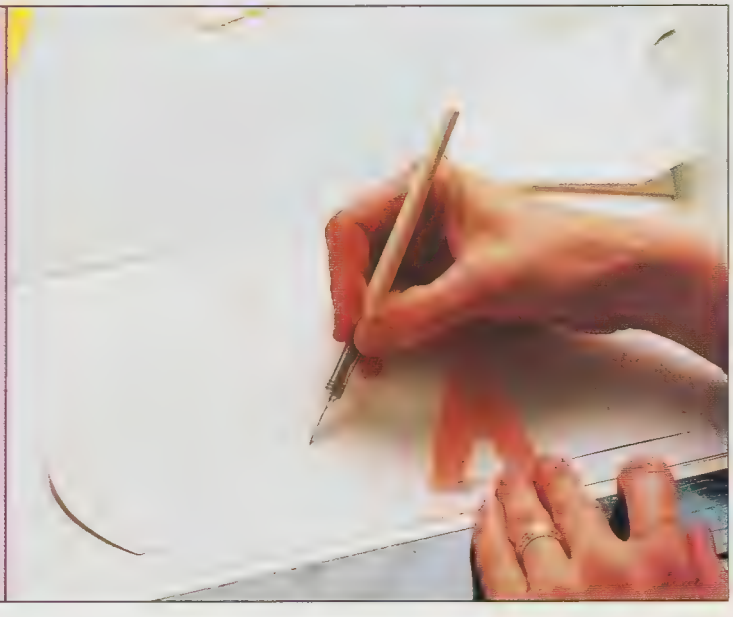
Reslink cut out her first rough comp with an X-Acto knife to see if she liked the design. Satisfied that she had achieved the effect she wanted, Reslink refined the drawing. Working on a lightbox, she lightly traced the lines with an HB pencil on another sheet of tracing paper and then cleaned up the rough drawing with a ballpoint pen. (See Figure 2.)

Reslink considers this her preliminary die drawing. After the museum approved the comp she submitted, she made a tight pen-and-ink die drawing, which functions as a mechanical. Working with a Rapidograph, she traced the design on a sheet of Trazon, a heavy translucent 100 percent rag paper. Along with the mechanical, she gives her client the 3-D comp.

The museum sent Reslink's die drawing to Freedman Diecutters, Inc. in New York City, and the card was stamped out of Curtis Tweedweave Dazzling White 80 lb. cover, a stock the museum prefers. In the die-cutting process, a series of sharpened steel blades are assembled in the desired configuration so "they bite through the paper like a giant cookie-cutter," explains Reslink. *Tip: Die-cutting can be done on either flatbed or rotary presses. Rotary die-cutting is usually done inline with the printing.*

Reslink notes that MOMA has carried "Reindeer" since 1982 and it is still a top-seller. (See opening spread for finished card.) In fact, says Scali, "Reindeer was our number one selling card last year. It's done consistently well for us. That's because the design is really fabulous, and it's more of a seasonal card than a Christmas or a Hanukkah card. People associate reindeers with the holiday season in general. That's a definite bonus."

**3** With another Z fold card in mind, Reslink sketched different kinds of animals that she planned to place in descending order, from large to small. After selecting a bear, a seal, a rabbit and a mouse, she traced the animal shapes on small pieces of tracing paper with an HB pencil and taped them in a row on tracing paper to see how the forms would fit together.



**4** To make a comp, Reslink first lightly traced her design on bond paper with pencil. She then cut out the shapes on her drawing board with an X-Acto knife. A leather punch (shown in Figure 3) is used to cut the eyes. Reslink notes that the rabbit's tail is cut out of the seal's shape (sketch and rough comp, top) and extends past the vertical fold. "It's OK to do that as long as you have enough uninterrupted folded area above the tail to maintain stability."

## VARIATION ON Z FOLDS

Exploring another way to use animals, Reslink envisioned a Z fold card where "the level of cutting descends from the tallest animal at the back to the shortest on the front." Even when the card is flat in the envelope, explains the designer, all layers are visible at once. When the card is opened, the planes start to move and separate, and the angles between them change. "That makes another kind of thing happen that I think is fun," she adds.

To create this effect, Reslink sketched different animals in various sizes. After selecting the ones she wanted to use—a bear, a seal, a rabbit and a mouse, all in descending sizes—she traced the animal shapes on small pieces of tracing paper with an HB pencil and taped them in a row on tracing paper to see how the forms would fit together. (See Figure 3.)

Once she was satisfied with the overall design, she traced it lightly on bond paper on her lightbox and then cut out the animal shapes on her drawing board with an X-Acto knife. (See Figure 4.) The tricky problem, according to the designer, is that "the rabbit's tail eats into the surface area of the seal so that

the bump of the tail sticks out past the vertical fold." Explains Reslink, "It's OK to do that as long as you have enough uninterrupted folded area above the tail to maintain stability."

Reslink's card known as "White Animals" has also been reproduced as small notepads in various colors for children. (See opening spread for finished card.)

## INTERRUPTING A FOLD

As a creative diversion, Reslink says from time to time she will fold a piece of paper and then interrupt the fold with another form. This technique proved very successful with a star she designed that has another added dimension—movement.

The idea was to cut the shape of a five-point star into a folded sheet so that a portion of the star would protrude when the card was folded. After sketching several designs based on this idea, she cut out two versions—one with a flat edge, the other with a rounded edge that formed a half circle. In comp form, she also experimented with different stocks, a Strathmore duplex in pink and orange and the same Curtis Tweedweave used in previous designs. (See Figure 5.) She eventually chose the rounded version when she discovered it rocked back and forth.

One of the important elements in this design is the struts that form the non-protruding area of the star. Explains Reslink, "The two points that stick out are very clearly part of the star, but the area below the fold has no definition at all. So by cutting out the struts, I define the edges of the star below the fold. It would be pretty boring without them." (See Figure 6 and refer to opening spread for final design.)

*Tip: Whenever design and press conditions permit, lay out your job so that the first fold will run parallel to the grain direction of the paper. The most durable folds, however, are normally made across the grain, but adequate scoring will permit them to be as smooth as with-grain folds.*

## OLD CUT WITH A TWIST

Reslink keeps a folder with ideas for new cards in her office; every so often, she pulls it out and plays around with different concepts. One idea that intrigued her was using the "Fa-la-la . . ." refrain from the Christmas song "Deck the Halls." States Reslink, "I had this notion of using the words from the song in sequence and making the letters abstract geometric shapes—the 'As' become triangles which become Christmas trees. The idea had a lot of potential, but I wasn't happy with the configuration I came up with."

But she kept playing around with the concept until she realized that the scale she was using was wrong. "Because they were stacked up [in three rows of three], it broke apart the memory of the song in everybody's mind. But by making everything a lot smaller, stringing it out

5 In this design, Reslink's idea was to interrupt a basic fold with another shape, in this case a star. After sketching several ideas on tracing paper, she cut out two versions—one flat, the other rounded. She also played with stocks: a duplex in pink and orange, and a white cover. She chose the rounded version after she discovered it rocked back and forth.

6 On the finished comp, Reslink uses an X-Acto knife to cut out struts, an important design element. "If you divide a star in half vertically, the part that sticks out is very clearly part of the star, but the part below the fold has no definition at all," notes Reslink. "So by making cutouts below it, I define the edges of the star below the fold."

and surrounding it by a lot of white space, all of the sudden it worked." Reslink made a comp out of bond paper, cut out the triangles in the top flap with her X-Acto knife and then cut out the tiny letters from pieces of Pantone paper and glued them into position with one coat of rubber cement. Her palette included red, tan, green and purple. (See Figure 7.)

MOMA's card selection committee approved the design, but asked Reslink to eliminate one of the colors—the purple for the "F"—to reduce printing costs. "We always have to consider costs," notes Scali. "We sell all our holiday cards through the trade, and our trade sales department has to be able to make some sort of margin of profit, given the 50 percent discount they give to the people who buy from them, which includes other museums, gift shops, corporations and individuals."

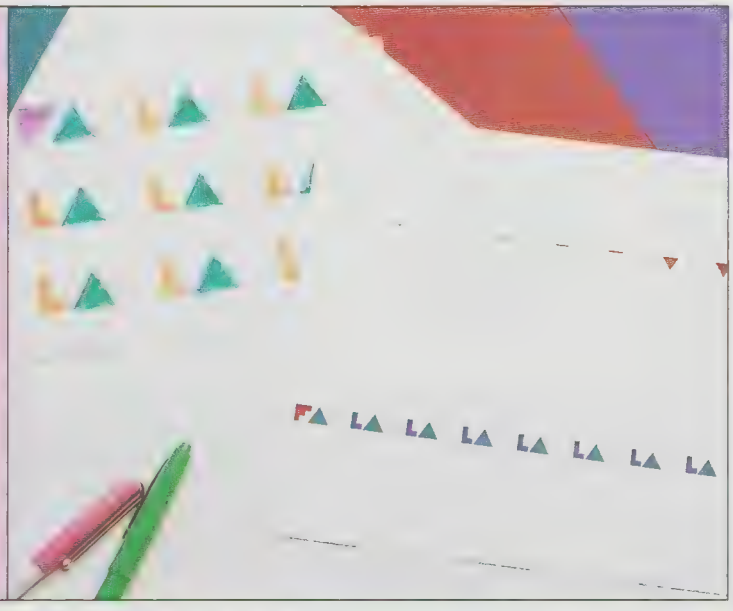
In fact, the committee suggested Reslink make the "F" and the star over the last "A" red, the "L"s tan and the "A"s green. Reslink balked, knowing that the tan would not work. After much discussion, she decided to make two comps: one with MOMA's colors and one with her own—red for the "F" and the star over the last "A", purple for the "L"s and green for the "A"s. "When Nicole put together that comp to illustrate her point, we understood. She was correct," says Scali. (See Figure 8.)

The card, which is currently in production for the 1991 season, is being die-cut by Shield in New York City from the Curtis Tweedweave stock and printed by Eastern Press, Conn. with the following colors: red (red, Pantone 032), purple (Pantone 265) and green (Pantone 327).

"Nicole is great to work with," sums up Scali. "We went back and forth in a fairly rigorous process on the Fa-la-la card, and she was very adamant about certain changes. She was willing to go through a number of revisions, but she really stuck to her guns and illustrated her point and everyone was very happy with it. I like to work with people who know what they want and can see it through."

**PERSISTENCE PAYS** Reslink knows what she wants. That's why she keeps a file of half-developed ideas in her office for experimentation. "In the back of my mind," relates Reslink, "I'm always looking for something that I can sell to the museum. It's lucrative, prestigious and fun. There was a design that I submitted this year, which the museum loved, but they can't produce it because it's too expensive. Someday I'm going to come up with a way to do that."

Perhaps her cards will inspire you to dream up new ways to use die-cuts. Just start a file of good ideas and let your imagination soar. ■



**7** Reslink wanted to make a card featuring the "Fa-la-la" refrain from the Christmas song. Her first unsuccessful attempt stacked the words. By changing the scale and stringing the words in a row, the design came together. The die-cut triangles fold over the abstracted "A"s, giving the impression of a tree. To make a comp, Reslink cut out triangles in the top flap with her X-Acto knife and then glued the tiny letters cut from pieces of Pantone paper.

**8** After the Museum of Modern Art requested that Reslink use only three colors as an economy measure, she made two comps—one with the colors MOMA specified (green, red and a tan, center) and one with the three colors she preferred (red, purple and green, bottom). The comp proved Reslink's point and the museum went with her choice.

*Susan E. Davis, a freelance writer who specializes in the graphic arts, is senior writer for* Step-By-Step Graphics.

# Achieving Tonal Values In Oil

***Hayes Henderson paints a calendar image using vigorous brushwork and his unique subtractive painting process.***

**By Simon Dumenco**

There is something eerie in the stillness of a painting by Hayes Henderson. One senses a throbbing resonance to the tranquility, as if the present calm has been brought forth, paradoxically, by unseen, thrashing forces.

The comparison is apt. Because if it seems that there's something lurking right beneath the surface in a Henderson painting, well, there is. The visual resonance comes from layers upon layers of paint applied through a vigorous, highly subtractive process that can leave mangled brushes in its wake.

Henderson glazes so masterfully—building up his pigments so they sometimes measure up to one-eighth of an inch thick on the finished piece—that few viewers initially register the fact that he seldom uses more than three or four colors in one composition. The seeming symphony of tonal values present is the result of a spirited interplay within very strict parameters. Henderson invariably strives for pieces which are at once intricate compositionally yet almost cartoonishly graphic in their simplicity.

That's because Henderson the painter is also Henderson the designer. He cut his teeth professionally as a graphic artist, and until he struck out as a freelance illustrator and designer this year, he was employed as an art director at Long, Haymes & Carr, Inc., an advertising and marketing agency based in Winston-Salem, N.C. Though he has met with success as an illustrator—a *Newsweek* cover was his very first freelance assignment—design work continually informs his artistic sensibility. (See sidebar.)

Henderson's style is a direct result of his technical approach, which can be characterized as layer after layer of thinly applied color that is rubbed into the surface of his illustration board with clean, dry brushes. He applies color with one brush and moves the pigment around to create the proper gradation and values with another brush, primarily a soft, pointed red sable. The soft edges that characterize his work are a direct result of this approach. For example, when painting transition areas between two colors, Henderson may use three brushes, one for each of the colors in that area and a third for the intermediate color that results when they are blended together.

## CALENDAR JOB

Henderson's singular approach is evident in a illustration commissioned as part of a promotional calendar by Jeff Ausband, a creative director at Josten's, the Winston-Salem-based printer which works with the artist's former employer, Long, Haymes & Carr.

"We have been thinking about doing this project for about five years now, and finally money permitted it this year," says Ausband. Their idea was to provide a dozen designers and illustrators freedom to create a single page of a 17 x 22-inch calendar. "The only restriction we specified was the size, and beyond that they could do anything they wanted to do as long as it could run in one pass through the new Heidelberg six-color press we have here at Josten's."

Ausband selected Southern artists almost exclusively (the odd man out was New York City-based illustrator John Mignoney) because he works most often with them. Hayes Henderson came to mind immediately, he says, "because I am a great admirer of his work."

With the commanding power of the Heidelberg at his disposal, the temptation, of course, was to go crazy. Henderson quickly decided, though, that he didn't want the piece to be rampant with fluffy printing techniques.

"I don't like things to be too flashy; hopefully it should stand on the merit of the

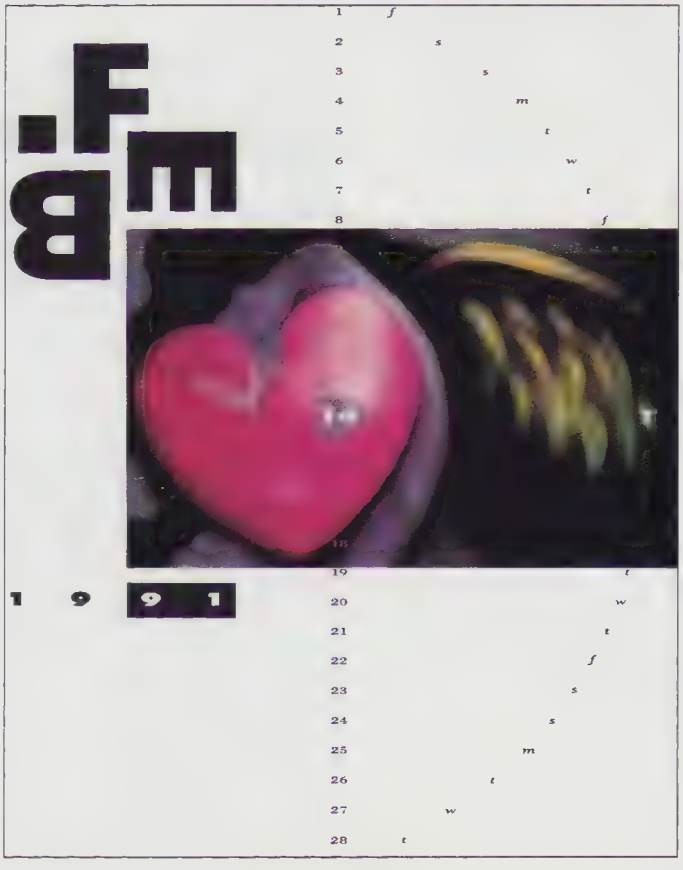


illustration and design." Fortunately, in this case, Henderson had control over both. In fact, after finishing the painting, he used a Macintosh and FreeHand (Aldus) to design the typographic format of the calendar page.

**CONCEPTING** Henderson started with a blank page and his assigned month: February, home of Valentine's Day. "Of course, I originally started thinking of images having to do with hearts," says Henderson, "and what occurred to me was the cliched, heart-on-the-arm tattoo. Then I thought that it would be appropriate to have the arm be very bulbous and muscular as you would think an arm with a tattoo might be.

"As I was developing sketches, I decided to get a portion of the face in the composition by resting the head on the hand. As I was doing that, and as I was rounding out the arm, it resulted in somewhat of a heart shape. It hit me—great—this works, so I took emphasis off the tattoo and concentrated the layout more around the entire arm." (See Figure 1.) While he felt good about the general direction of the sketches, he did not yet have a specific image on paper.

**DESIGN** At the same time, Henderson kept his overall design in mind. "I wanted the design to work with the illustration while not really taking away from it. So I did thumbnails trying to incorporate the type with the visual." His plan was to place the numbers in a vertical line down the middle of the page. He was drawn to the inherent graphic logic of playing off of February's symmetry: the month is 28 days long, and Valentine's Day occurs on the 14th—smack in the middle. He planned early on to have the number 14 reverse out of the heart tattoo, with the rest of the days of the month stacked above and below it. (Refer to the opening spread.)

As for the initials of the days of the week (M,T,W and so on), Henderson tried various placements. "I played around with the type encircling the visual, or running up one side or being wavy—but it just seemed like I

**Cupid Strikes** For a Josten's promotional calendar, Hayes Henderson was given free reign to illustrate and design the month of February. He chose the clichéd heart-on-the-arm tattoo, incorporating the number "14" into the heart and forming the numbers and days of the week into a bow. He also found that the curve of the arm echoed the heart shape of the tattoo.

1 With the idea of using the heart-on-the-arm tattoo concept, Henderson drew a variety of sketches. While pleased with the initial direction, none of the drawings were exactly what he wanted. Note also he is playing with the idea of incorporating the dates and days of the week into the image (on the yellow pad).

2 In frustration, the artist pulled out a piece of Crescent hot press illustration board, and working from his disparate sketches, pulled together his underdrawing. The sketch consists of the most minimal framework possible and includes more of the wing than early sketches.

3 Henderson uses different brushes to apply paint and to move it around. These brushes represent about how many he will have going at once. "I'll have a flat brush with a lot of paint on it to put down a lot of color—say it's purple. Then I'll have a medium-purple brush. Then I'll have a great big soft brush with hardly any purple paint on it. I'll also have the same set-up for the other colors."

was doing it for the sake of doing it. So then I looked at the movement in the piece and the possibility of playing the type off some aspect of the composition. It occurred to me that there was such a nice, bowed arch to the character's back that I thought it would work well to have the type mimic that." The resulting bow shape took on additional meaning because Henderson started to think of the character as being "sort of a funky, muscle-bound cupid." That the form created by the type subconsciously suggests a cupid's bow is serendipity, pure and simple. At that point, says Henderson, "It just seemed logical to put a wing on the cupid."

## CREATING A GRAPHIC FRAMEWORK

Working from his disparate rough sketches—an arm here, a wing there—Henderson pulled together his underdrawing in pencil on Crescent hot press illustration board. The underdrawing, which measures 8 x 13½ inches, has the most minimal framework possible, laid down rapidly. (See Figure 2.)

"I finally got so frustrated with my sketches—I wasn't coming up with anything I liked—that I pulled out a piece of illustration board and said 'this is going to be the piece.' I didn't really know what I was going to do. I figured if I just started on the piece something would click."

The artist sprayed the board with Crystal Clear (Krylon) to seal the drawing before painting. *Tip: The spray fixative also prevents the board from absorbing too much pigment. While not an archival method, painting on an unprepared surface like this can produce some interesting results.*

Henderson imagined two basic colors (purple and red) playing off of each other, heightened by a black background. He discounts the other color seen in the finished piece—the gold of the wing. "All along, I was thinking of the wing in the piece as not really being that much of a color, per se. I usually use intense, often primary colors. But because the color of the wing is blushed away, it softens it and helps keep emphasis on the body." As he worked on the piece, the fleshtones of the cupid [pink and lavender] would intensify, while the gold would diminish with the application of black.

"I'm getting more and more into using black simply as a platform for two or three dominant colors and leaving it at that," says Henderson. "That's a very graphic approach



Photos by Lloyd Aaron

to painting, but my intent is to use blacks or muted tones as vehicles for the interplay between two or three primary colors."

With Henderson, color clearly comes first. "Often," he says, "I'll resolve the color scheme before I start thinking of the content or composition of the piece."

## TOOLS

When it comes to selecting the equipment needed to achieve his "look," Henderson is no formalist. His set-up, like his style, is highly improvised. "I don't really lock myself in as far as brushes or paint are concerned," he says. Though he has mostly been using Rembrandt and Grumbacher oils lately, Henderson confesses that he will use anything that's sitting around, even going so far as to mix rival brands to achieve a desired hue.

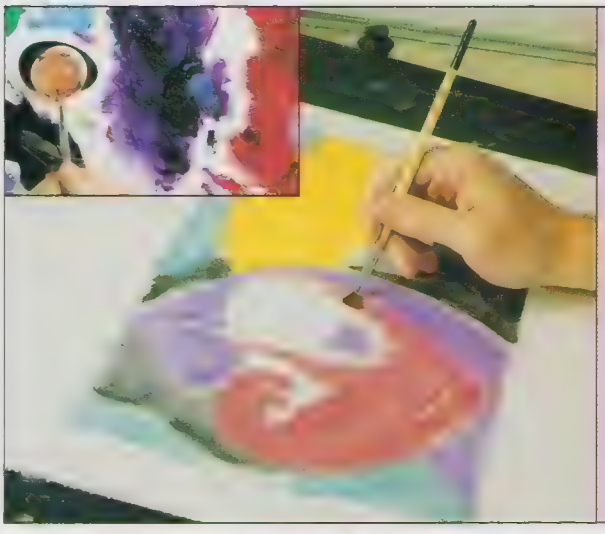
As for brushes, "I've got some very, very good ones and some mediocre ones and some bad ones and they all serve their purpose. The bad ones are caked up and stiff, but they do move paint a certain way."

His finer brushes, like his Winsor & Newton Series 7, come in handy to achieve the fine gradations of tone that are a hallmark of his work. But even these take a beating. "It's almost painful to use them the way I do," he says, "because they're beautiful, hand-tooled brushes that are super expensive, and I'm grinding them into the board."

*Tip: While expensive, sable hair brushes are effective blending tools. Because they are made up of natural hairs, however, they are slightly brittle, which means the hairs can break if the brushes are abused. The hairs of inexpensive synthetic brushes can be misshapen from abrasion, but they do break less often and stay fairly soft, if kept clean.*

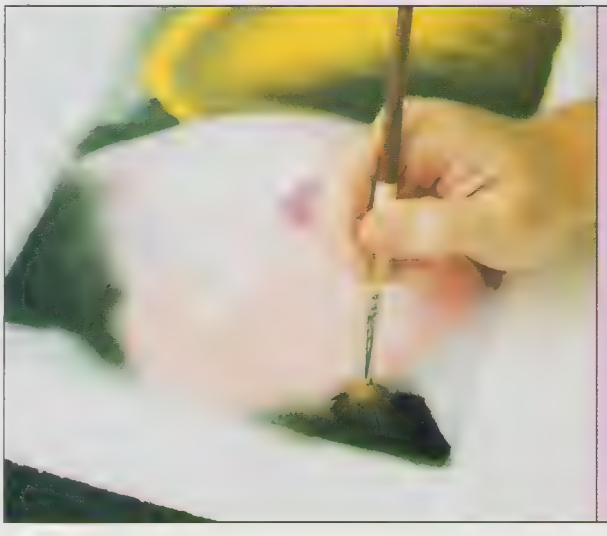
One look at the small army of brushes Henderson keeps going at one time and you can tell this man considers himself to be at war with his paint. (See Figure 3.) "There are painters who let the paint do what it will and that's fine," he says, "but for now I'm more into controlling its movement."

"I used to work very texturally. What I'm attempting to do now is eliminate traditional painterly characteristics so potentially the viewer only perceives form and color. I try to keep the initial emphasis on the content of the piece rather than the construction. I think with the way I'm working the paint still has plenty of life, not just in the conventional sense as with a piece



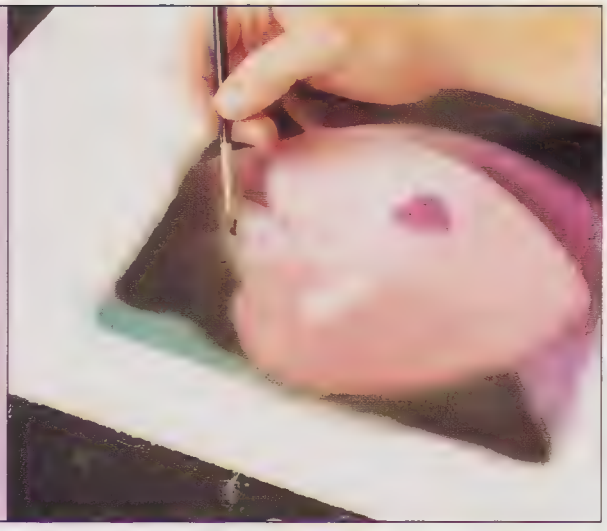
**4** Henderson established his color scheme (his purple, red and black with a touch of yellow and green palette is shown in the inset) early on, then slathered on his underpainting with a broad brush dipped in Liquin. "I always use any range of flat brushes to put the paint down, and usually I'll scrub it around and get it all under the surface. And then as soon as I get paint down, I'll use a paper towel to pull up as much of it as I can."

**5** The artist's painting technique is highly subtractive. He explains: "I started building up, and then wiped a good bit away, and then started in with the big, round brushes." At this point, he still maintained the cupid's wing as a significant element, but he would eventually minimize it. "It's there as a compositional element, and it might cater to the concept, but it's not absolutely necessary."

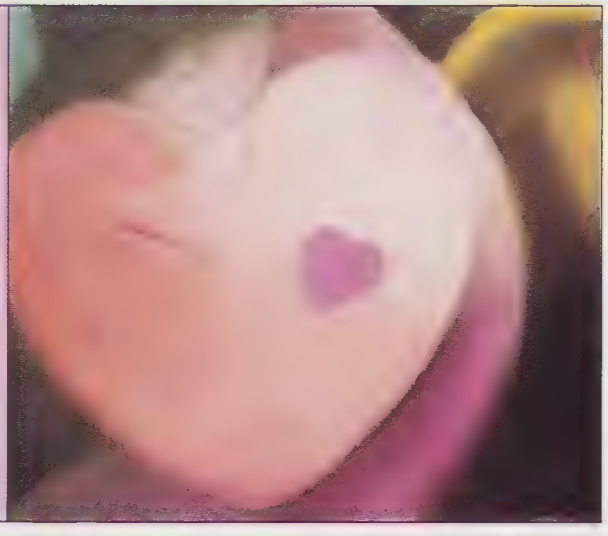


**6** Here Henderson started to lay in a heavier black framework with a full, wide brush. After each stage shown, Henderson spray fixed his illustration and let it sit for about 15 minutes to dry. He continually dips his brushes in Liquin, too, to facilitate drying, but avoids overusing it because "the paint starts pulling rather than being able to blend smoothly; and if you let it sit too long it gets tacky and sticky."

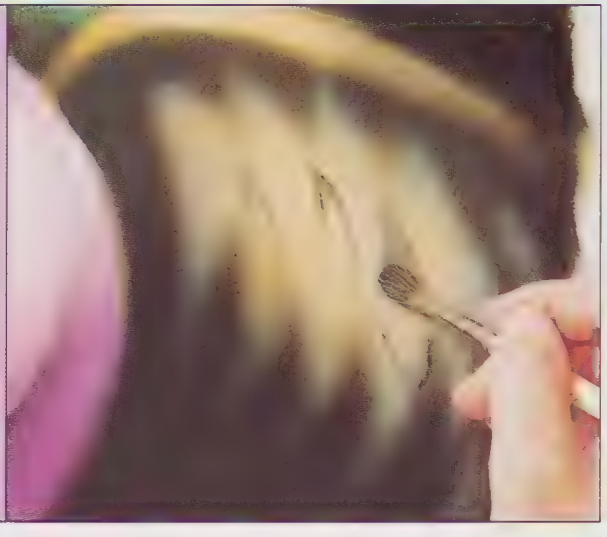
**7** Henderson also used black to refine the cupid's facial features, but again, held himself back. "I'm always conscious of frivolous detail, because that's not really where my work is. I think it's being aware of the essentials and boiling them down to their barest form while keeping the imagery legible."



**8** The iconographic, almost cartoonish simplicity of Henderson's art has been established at this stage. He has also created soft edges on all of the forms, a result of working back and forth between one area of color and another.



**9** At this stage, Henderson began to tone down the yellow in the wing with white and added some detail. His purpose was to make the wing subtle so it would not take away from other important areas. Note how he applies his color in line then spreads the pigment around to create the transparent tone and soft edges.



where the viewer is drawn to the texture—paint build-up and brushwork—almost as soon as the art is initially confronted."

Because he doesn't like painting wet on wet, there are two things Henderson will not do without: Liquin (Winsor & Newton) and Crystal Clear (Krylon), though he tries to avoid overusing them. The problem with Liquin, a painting medium that facilitates drying, "is that it starts drying the paint so rapidly that the paint starts pulling rather than being able to blend smoothly," he explains. "If you let it sit too long it gets tacky and sticky." The problem with Crystal Clear is that applied too liberally, it can cause instability– "inherent vice" in curatorial parlance—between the layers. "A piece I did three years ago is rotting away because of the Crystal Clear. I used a can on that one piece; it was a one-nighter that I knocked out for the next morning."

Henderson, in fact, uses so much spray fixative, that he discovered dust specs (in the form of tiny reflections) were showing up in some of his printed work. To alleviate the problem, he now sands his pictures three or four times during the painting process with very fine sandpaper. "During the course of a piece, I will build up six layers of Crystal Clear, sand it down smooth, then start painting again. This way I get a completely slick surface with no shine or bad reflections," he explains.

## INITIAL APPLICATION OF PIGMENTS

There's nothing subtle about Henderson's initial application of paint. "I always use any range of flat brushes to put the paint down," he explains, "and usually I'll scrub it around and get it all under the surface. And then as soon as I get paint down, I'll use a paper towel to pull up as much of it as I can." (See Figure 4.)

This give-and-take continued through much of the time he spent working on the piece. "I started building up, and then wiped a good bit away, and then started in with the big, round brushes." (See Figure 5.)

His basic black framework was also applied with scant subtlety, though he began to use smaller brushes at this stage to lay in some of the more basic details, such as the curvature and features of the cherub's face. (See Figures 6 and 7.)

"After I got the paint to where I wanted it, I took the piece out to the fire escape and hit it with Crystal Clear and let it sit for probably 15 minutes."

## BRINGING SHAPE

While Henderson's sketch does indicate a general direction, he is very open to compositional changes as he paints. In fact, says the artist, "a lot of the composition of a piece really happens while I'm painting. As I paint I can see directions that the piece can go in, so I map it out from there. I didn't have this piece plotted out in my head before I started painting. Compositionally, yes, but a lot of things like the feathering of the wings and the facial expressions happen when I'm painting."

About the only color block that remained relatively constant from early on was the tattoo. Henderson avoided overdoing it because he wanted it to serve as a flat, iconographic field for the reversed-out "14."

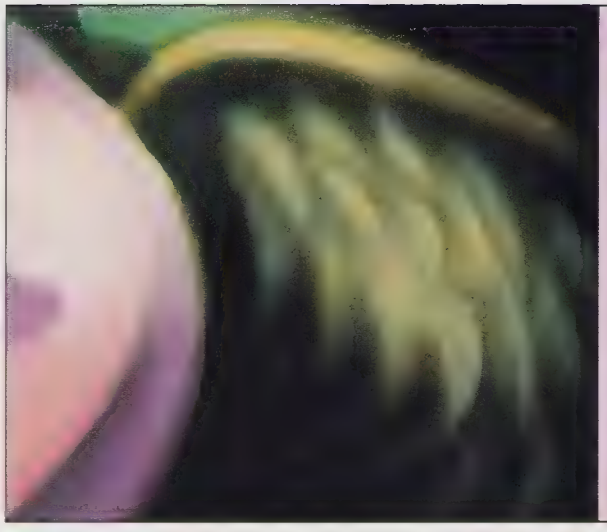
**SIMPLIFYING DETAIL** The other primary fields of color that make up the cupid's fleshtones quickly grew in intensity as Henderson attacked them with a flurry of brush strokes and hits of Crystal Clear. Though he used fine brushes as often as broad, flat ones, he avoided rendering minutiae. "I'm always conscious of frivolous detail, because that's not really where my work is. I think it's being aware of the essentials and boiling them down to their barest form while keeping the imagery legible."

Henderson was especially conscious of avoiding the temptation to create an overly lavish wing. "I decided it's there as a compositional element, and it might cater to the concept, but it's not absolutely necessary."

Henderson literally keeps the big picture in mind. "I think a real danger with representational artists—a trap that illustrators often fall into—is that they can get so swept up in the execution of the imagery that it's hard to pull back and think about what's going to make the piece work as a cohesive unit. I don't want the viewer to get bogged down in overkill."

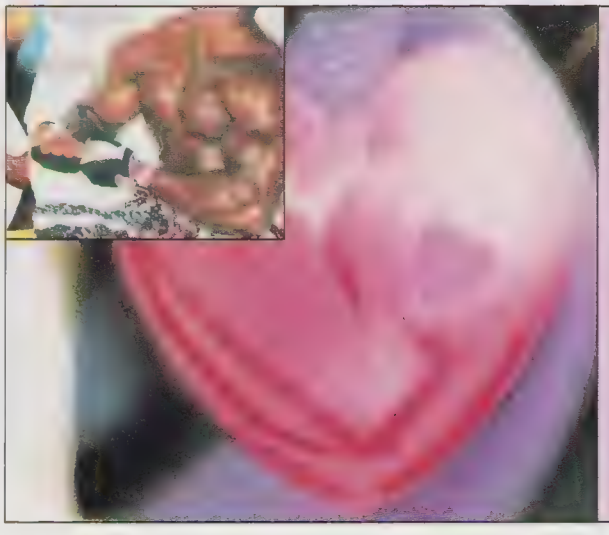
Henderson's single-mindedness in this regard became increasingly evident with his application of black as the piece progressed. He began to obliterate the deep gold of the cherub's wing with broad strokes of black. (See Figures 8 through 10.) Around the face, the black swept down like an enveloping fog. "Basically I used the black to mask off everything that I didn't want seen," he says. (See Figure 11.)

The soft edges that Henderson achieves, especially between light and dark areas, are a result of working back and forth in these areas. "What I do is realize my light



**10** The delicate feathered effect was achieved with a range of flat and mid-range brushes of varying quality. Henderson switched brushes repeatedly when working on the wing. "For the most part I used a mid-range brush that starts blending the paint but doesn't get as smooth a blend as a Winsor & Newton Series 7 brush; I used the Winsor & Newton to really get the fine gradation of the tone."

**11** When it came to the face, Henderson drew his black down like a drape to scale back his detail. The large brush here has almost no pigment on it. "When you get a big brush and bring it down, the change in gradation is so gradual that you hardly see it coming up until it gets to the point where you want to stop."



**12** When it came to detail in the cupid's arm, the artist says he felt he needed to consult reference for anatomy, yet the structural lines Henderson laid down for the muscles were intentionally crude. (His reference, which he ended up not using, is shown in the inset.) Note the horizontal slash of pigment right beneath the tattoo; as Henderson blended this clump of paint it gave the bicep remarkable three-dimensionality.

areas, leave it light and then blend in my darker colors. That usually muddles up the lighter areas a little bit so I usually go back in and highlight the lighter areas."

Even as he worked on the very finest details, he held himself back. "When you get into the face and the nose and mouth area and you're working with a No. 8 brush, it's almost like you're restraining yourself." The crispness of the edges and the resonance of the colors came from Henderson's almost fanatical devotion to the application of pigment. "By this point, I'd already blended out the paint so there was just a little bit of pigment on the surface. It's not like I hit it and it's there. I'll dab on the same spot 15 or 20 times to bring out tone, because there's so little paint there."

## PUMPING PIGMENT

With the figure well established and the wing blushed away into shaded feathers, Henderson started on the cupid's arm. For the first time, he referred to reference images torn out of body-building magazines. "I felt I needed to get some feel for anatomy for the arm muscles of that proportion. The funny thing is that once I found that piece of reference, I really didn't use it."

The structural lines for the muscles were intentionally crude. By blending them out with a No. 8 brush, Henderson brought curvaceous form to the cupid's muscle tone. (See Figures 12 and 13.) The form, again, was brought into greater relief with repeated brush strokes over diminishing amounts of pigment. "It gets easier to blend because you're using less and less paint," he says, "The richness of the color is already

# CAPITALIZING ON A STYLE

You can thank illustrator Matt Mahurin—sort of—for inspiring a crucial moment in Hayes Henderson's development as an artist. Henderson explains: "While I was a painting major, Matt Mahurin came to East Carolina University. And I didn't go to see him, but I heard about him. And as is the way at any school, as soon as a visiting artist comes in, everybody starts trying their technique. I heard through the grapevine how he painted, so I tried it.

"But I didn't hear completely correctly," Henderson laughs. "I used no brushes. I would squeeze out the oils over the board and just use a paper towel and smear it around. I worked very recessively—putting a lot of paint on and then taking a lot of paint off to build a glaze."

Henderson gradually returned to brushes, but the visceral joy of getting his hands in the muck stuck with him. Hopeless romantics can take delight in the fact that another epiphany of sorts came when Henderson met his wife-to-be, also in school.

"The fine art department's structure was toward primarily non-representational painting. My concentration was more figurative, therefore my work was often labeled 'illustrative,' the kiss of death for a painting major. I took it as quite a slap. I was taking a painting class—that's where I met Elizabeth, my wife. She was a design major and pretty much opened me up to the commercial arts. At the time I really had no idea what graphic design was. I never really paid attention to it, at least as a creative outlet; I just thought it was something that got done.

"So after three-and-a-half years as a painting major, I decided that if professors wanted to label my work illustrative, fine. I'll be an 'illustrator.' I'll be a 'commercial' artist."

After graduating in December of 1987, Henderson ended up working at the Winston-Salem advertising and marketing agency Long, Haymes & Carr, Inc. (Elizabeth soon joined him, and remains there.) Hayes started as a comp artist but soon started getting small design projects to work on; within a couple of years he made his way to art director.

In 1987 Henderson got a piece that he had done for his school's art magazine into "American Illustration," but his art fell by the wayside thereafter. Then, "out of the blue," Henderson got a call from John Houston, an art director at *Newsweek* who had seen Henderson's "American Illustration" piece.

Houston wanted a moody, psychological piece for an analytical cover story on "the mind of the rapist." Though the Bejing uprising and the Ayatollah's death caused the rape story to be bumped repeatedly and then shelved, it eventually was resurrected along with Henderson's cover illustration last year when New York's Central Park rapist went on trial.

Meanwhile, art director David Carson of *Beach Culture* magazine called, also out of the blue, to commission an illustration. And Houston's successor at *Newsweek*, Peter Comitini,

probably where it should be–you're just giving it form."

Though there was never much pigment applied to the cupid's shoulder to begin with, Henderson ended up fading out its pinkish hue even further, with the application of slight amounts of white. The end result is an arm that seems to pop into three dimensions. (See Figure 14.)

## RESOLVING DETAILS

"The hand was a tough spot for me all through the piece because I never really resolved how I wanted it to be," says Henderson. "If you look at the first few steps, and even at the sketches, the hand matches the arm–it's very powerful, with Fred Flintstone-like fingers; they're big and fat and cumbersome. As the piece developed it started getting more and more delicate. I felt it needed to be a little more finessed in general as far as its relationship to the figure was concerned."

Henderson decided not to resort to reference; instead, he quickly sketched out on paper how he thought he might want the fingers to look. Then with brushes of varying sizes, he brought the fingers into relief. At one point, he applied more of the same stark white he used on the shoulder to the fingers. "But I put it on so thin that the color came through; it warmed up immediately." (See Figure 15.)

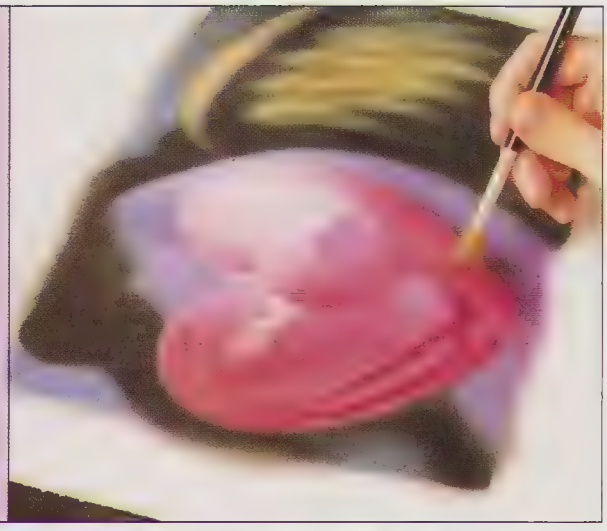
Also at this stage of painting, Henderson finessed the negative space beneath the hand. "I wanted the arm to maintain the heart shape, but I couldn't figure out what to do with that little negative area where the arm doesn't come into play. I didn't

commissioned additional works. Before he knew what hit him, Henderson had the start of a high-profile freelance illustration career. In fact, he began getting so much freelance work in both design and illustration, he recently quit his job and now works full time out of his home.

Comitini credits Henderson's striking style for his growing following among art directors. "Hayes has an amazing style for what I would term dark subject matter. And he's very good at coming up with images that are representative not of a specific person, place or thing, but are symbolic of a larger idea."

**Henderson Work** At far left, a conceptual illustration to accompany a story about a skateboarder for *Beach Culture*. (A.D. David Carson.) Below left, a cover for *Newsweek*—"mind of the rapist." (A.D. John Houston/Peter Comitini.) Below, a poster for a gallery opening.

13 By blending the arm's structural lines with a No. 8 brush, he brought curvaceous form to the cupid's muscle tone. Achieving subtlety of tonal values, says Henderson, "gets a lot easier the more paint you get on the board. It gets easier to blend because you're using less and less paint. The richness of the color is already probably where it should be—you're just giving it form."



14 Here Henderson enhanced the three-dimensional "pop" of the muscles on his cupid's arm by blending in trace amounts of white over an area that already had scant amounts of pigment (pink and red) on it. The bicep especially seems to be reflecting light coming from the direction of the viewer.

15 Henderson says he never really resolved how he wanted the hand to look and at this point decided to change it from a powerful to delicate look. Here, he first sketched the hand with pen (bottom), then painted in the lines on his board with white.

really feel that I had to be quite so literal so that there absolutely had to be something there; but what was there had to be technically and anatomically correct. What you should see is the chest; but I didn't want to put any more detail in there, so I just decided to make it sort of a non-area." As the artist has progressed, the negative space goes from being pink to lavender in color. (See Figure 16.)

The calendar assignment, by this point, was basically complete, save for some finessing brush work the artist touched on here and there. (See Figure 17).

## POSTER DESIGN

When the illustration was complete, Henderson used Long, Haymes & Carr's Mac II and FreeHand 2.02 (Aldus) to design the typographical arrangement. He chose Bodoni for the dates (numerals) and Berkeley Bold Italic for the initials of the days of the week. For the "FEB." abbreviation, the year, as well as the "T" and "14" indicating the Valentine's Day holiday, he specified Helvetica.

To align the type in the center of the poster, he selected the line of numbers and under the Element menu, aligned and distributed them so there would be an equal amount of space between each of them. In FreeHand's tool box, he used the circle/ellipse tool to draw a circle that had the kind of arc he envisioned for the bow. He then typed in all of the initials for the days of the week. Using the Element menu again, he aligned and distributed the letters so there was an equal amount of space between them. To place the type on the arc, he went to the View menu, pulled down a grid so he could align the dates and days on the same line. Next, he dragged each day-of-the-week initial over to the half circle and aligned it on the curve. When finished, Henderson deleted the circle.

On the screen he worked at 100 percent (17 x 22-inches), but proofed on a laser printer at 8½ x 11-inches. (See Figure 18.) He had a color photocopy made of the illustration so he could see how the type would align. Working with a high resolution printout made to size on a Linotronic, he then pasted up his mechanical. The large type—"FEB," "1991," the "14" and the "T"—were cut out by hand and finally positioned on the mechanical.

Henderson specified that all type outside of the image area would print black.

But instead of reversing out the type that would appear on the illustration, which would have been too harsh against the subtle image, he specified that it be printed with a 65 percent screen. The type printed in the image area gives an overall gray appearance, but some letters appear to be more blue or red, due to the four color printing.

Because this was to be a promotion for a printer, Henderson also wanted to display a "little flash." To do that, he specified a glossy paper (Kromekote) and used a matte varnish on the right side of the poster (excluding the illustration), on the large blocks of letters and on the black rectangle behind the '91. While the artist's original idea was to dry-trap the varnish (apply the varnish after the four-color inks had dried), the printer stipulated that the poster had to be printed in one pass.

He went ahead with the dull varnish, and while there is a notable difference between the dull and gloss sides, since it was not dry trapped, the type overprinted with the matte varnish does not appear as dull as if it had been dry trapped, Henderson explains. This is because the wet black ink mixes with the wet matte varnish.

## FINAL ARGUMENTS

Josten's creative director Jeff Ausband says he was delighted with Henderson's piece and reports it is probably the most popular image in the printed calendar. Henderson, meanwhile, relishes the fact that his art is on display all across the country in a stable form—a printed calendar.

As for the longevity of the original painting, who knows? While he takes more archival care with gallery paintings, this piece was executed in the space of three days from conceptualization to completion. It has a lot of spray fixative in it and probably won't last forever.

No matter. Henderson is philosophical about the ephemeral nature of his illustrative work: "It's something that I don't cry about." He dismisses the importance of any of his illustrations as objects to be treasured and collected. He considers his works to exist, truly, in their printed state. ■

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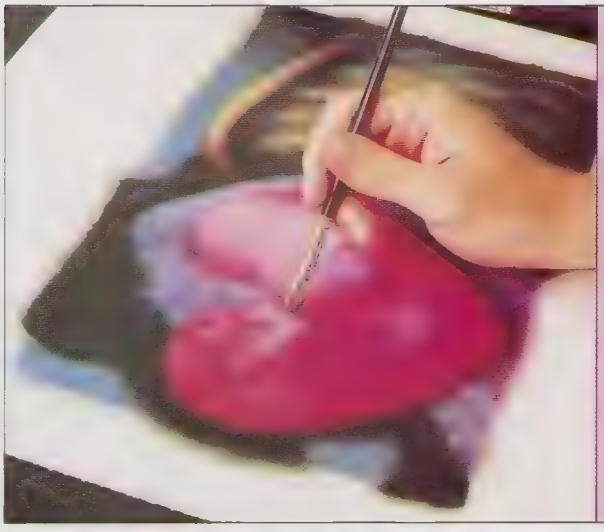
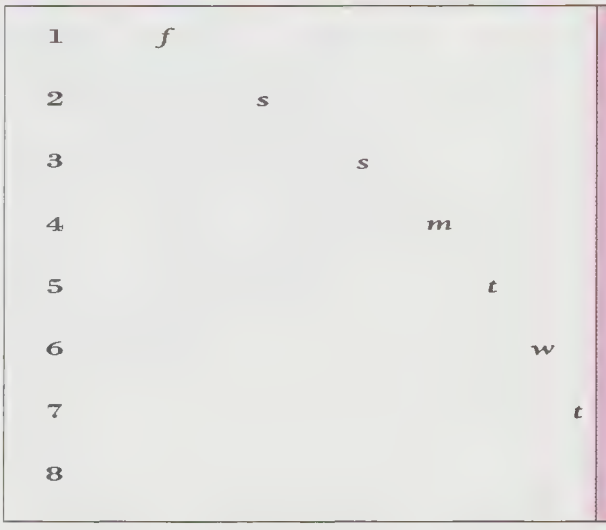
*Simon Dumenco is an associate editor at* Special Report: Personalities *magazine.*



**16** Instead of being literal regarding the negative space beneath the hand, the artist says he decided to underplay it by painting in a gradation of pink to lavender. "What you should see is the chest; but I didn't want to put any more detail in there, so I just decided to make it sort of a non-area."

**17** At this point, the painting was basically complete; Henderson simply touched up the piece here and there primarily with a mid-range sable brush. His plan for the design was to place numbers (dates) for the month down the middle of the poster and the days of the week in an arc to suggest a bow.




**18** When the illustration was complete, the artist used Long, Haymes & Carr's Mac II and Freehand to design the type arrangement. He chose Bodoni for the dates, Berkeley Bold Italic for the initials of the weekdays and Helvetica for the "FEB." abbreviation, the year, the "T" and the "14," indicating Valentine's Day. On the screen he worked at 100 percent (17 x 22-inches), but proofed on a laser printer at 8½ x 11-inches.

# A 'Kinetic' Slant on Identity Graphics

***Dean Johnson Design creates a 3-D logo for an identity program using a kinetic design that reveals two different images when embossed.***

**By M. William Lutholtz**

When you first examine one of the Creative Leadership Group's business cards, you may think you are seeing a hand waving through a venetian blind. But tilt the top edge toward you and suddenly you see a hand within a hand. Tilt the bottom edge and the image shifts to a view of the Western hemisphere.

The changing logo isn't a hologram, nor is it a plastic-coated "trick photo" like those that were popular in the 1960s. It is simply an embossed image printed on a piece of business card stock.

Designed by Bruce Dean and Scott Johnson of the Indianapolis-based Dean Johnson Design, the logo was inspired by the work of Israeli artist, Yaacov Agam, whose paintings and constructions Dean studied while in art classes at Ball State University. Agam (born 1928) is known for his dimensional artwork, including paintings on accordion-like surfaces that reveal different colors and shapes depending upon the direction from which they are viewed. His "kinetic art" also takes the form of a mobile or sculpture. As the work slowly revolves or viewers walk around it, the art appears to change. *Tip: For more information on Agam, you may want to consult, "Agam," by Frank Popper, Abrams, 1976, 1980.*

This kind of imagery proved to be the perfect solution for an identity program for Creative Leadership, a firm that defines itself as a human development company, specializing in training, program development, conference coordination and evaluation services for youth and community organizations.

## DESIGN EXPLORATION

The firm, headed by Tom Weesner and Michael Priller, was searching for a complete identity program—logo, letterhead, envelopes and business cards—that would reflect its work. Explains Dean, "During our first meeting we kept talking about all the interactions that go on within their training programs—youth and business people, youth and older people, black and white, rich and poor, men and women." This idea of interactions became a recurring theme that the designers began to work with for the logo.

As they continued meeting with the clients, the designers would make rough sketches of several logo options—usually just quick pen and pencil drawings on paper—as a point of departure. They did more than one hundred of these sketches, working with different ideas and combinations of ideas such as light bulbs, computers, groups of people, the brain, hands, the world. (See Figure 1.)

Once the clients left, they would further develop the best ideas. "We work like a tag team," says Johnson. "Bruce would start doing some art and I'd work on type. I'd lay out my stuff and he'd lay out his, and we'd look at each other's work, and then go off and develop some more ideas that the other one had started."

After three or four meetings, it was apparent that Priller and Weesner liked several of the logo ideas, but they especially seemed to gravitate to the images of hands and the globe. (See Figure 2.) They felt the hands symbolized their involvement in adult/youth training programs and the globe represented their emphasis on community service. "They kept saying, 'I wish we could use both of them,'" Dean recalls.

**INSPIRATION FROM THE PAST** That cue made Dean think back to another logo project he had handled a decade earlier for a typesetter and printing company that were merging into one firm. "They wanted to use the two existing logos together for six months or so while they were merging the two companies." The problem was that the two companies had completely dissimilar logos.

That was when Dean remembered Agam's work. "I kept thinking . . . two logos, two different things . . . and then I remembered Agam's three-dimensional paintings. So I cut the logo into strips, put the strips together, alternating logos every other strip." He then had the artwork embossed into an accordion-like shape.

The result was a new identity that would alternately show both of the firm's logos depending upon how it was held. The 3-D logo was used for about six months, then was "retired" when the newly-merged firm established its own identity.

Dean realized that the Creative Leadership logo was a perfect case to use the same solution. The designers discussed the idea with Weesner and Priller to explain the advantages and disadvantages of the 3-D approach. "The clients really liked the two separate logos; it carried the idea of 'interaction' for them," says Dean. "We told them that it would cost considerably more than a conventional flat-art logo. But then we showed them the previous logo, and they

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**3-D Logo** Dean Johnson Design's identity system for the Creative Leadership Group incorporates an embossed logo that is actually two images. When viewed straight on, it appears to be a hand seen through venetian blinds. When viewed from the top down, one sees a hand within a hand (upright card, top); when viewed from the bottom, a globe with the western hemisphere comes into view (upright card, bottom). Also shown here are other elements of the identity, all printed on Speckletone stock (French Paper Company).

loved it. They discussed the cost and decided that it was worth the extra expense."

The extra expenses would chiefly be in the cost of the die. *Tip: According to the embossing firm D.E. Baugh, the cost for an initial die is approximately $300, depending upon the size. Duplicate dies are about $75 each, again depending upon the size. Average costs for embossing are generally $100 per 1,000 printed pieces.*

The design required a two-color printing job, which also added to the final cost of the identity graphics.

## CREATING THE ARTWORK

Dean began by drawing the two individual logos—the small hand within the larger hand and the world—in black ink on white paper.

When he had finished the two separate pieces of art, which were approximately 5 x 5-inches each, he photocopied them and carefully measured and cut each one into nine strips. "I had to design this so that the top and bottom edges of the art would fold down because that was the embossing requirements," explains Dean. "In addition, I visually assessed the piece to see how many angles I wanted in it." He then mounted the strips onto a separate sheet of paper, alternating strips from each piece of art. (See Figure 3.) *Tip: It is possible to use numerous folds in embossing this kind of graphic, but the artwork is more difficult to keep in registration.*

Next, Dean made a photocopy of the new artwork and lightly scored each strip so they would fold into crisp, accordion-style ridges. (See Figures 4 and 5.)

**A PROBLEM OF PROPORTIONS** While all worked well for an initial study, the designers realized they would have a proportional problem when the artwork was embossed. As the strips were cut and glued together, the finished piece of art became a rectangle instead of a square (folding restores the art to its square size). But in the embossing process, the paper isn't folded, it is merely stretched. "With embossing, you have to start with a square and end with a square, you can't start with a rectangle and make it into a square the way you can by folding," Dean explains.

"In the case of the previous logo, I had been lucky in that one of the logos was thin and tall, so that it just happened to work out right. I removed a narrow part of each strip of the other logo and the proportions appeared to stay the same," adds the designer. "But in this case, both pieces of art were square. And I couldn't remove strips of the globe logo because people would notice that parts of the continents were missing."

## PROPORTIONING IN FREEHAND

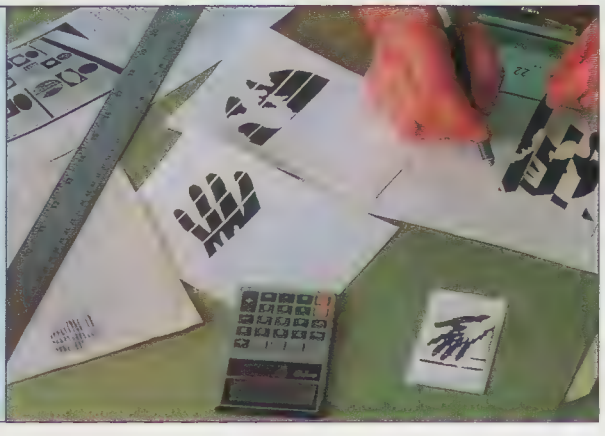
The solution involved re-proportioning the art on computer. Using a Hewlett-Packard Scanjet Plus, staff designer Jerry Velasco scanned the comped art into Aldus FreeHand 2.02 on the firm's Mac IIcx. "I asked Jerry to shrink it down to a square for me and he was able to do that fairly easily."

Velasco's FreeHand work on the project was divided into two phases: Mocking up a rough comp to see if it was possible to resize the image on computer, and then creating reproduction art.

In phase one, Velasco scanned in Dean's rough image that had been cut and pasted into strips. There was no attempt to clean up the art since this was an experiment as to how the art would re-size. Using FreeHand's pointer tool, Velasco grabbed one of the vertical corners and reduced the

**1** Dean and Johnson created as many as 100 different rough sketches in determining an appropriate logo identity for their client Creative Leadership Group, Inc. Included here are thumbnails, ink drawings and several typographic solutions that explore a wide range of ideas.

**2** After several discussions with the clients, two logos began to emerge as the top contenders: the image of a hand within a hand, and the globe. The problem, of course, was how to meld the two images into a single logo.



**3** After drawing the two logos separately, Dean cut them into carefully measured strips (nine each) and began to assemble them on a separate sheet in alternating strips. As reference, he is using artist Yaacov Agam's work (top left) as well as a previous dimensional logo he designed for an Indianapolis firm (bottom left).

Photos by Todd Martens, Pictorial, Inc.

length of the piece until it was equal to the width—a square, in other words. (See Figure 6.) The computer comp, which took about 15 minutes to create, was rough, with jagged edges, but still good enough to get an idea of what the final product would look like.

**FINAL ART** For phase two, which involved creation of mechanical art on the computer, Dean first produced two camera-ready pieces of art by hand, one of the hands and one of the globe. Velasco scanned both pieces separately at his highest resolution—300 dots per inch.

"Because the original art was smooth, I wanted to keep it smooth in FreeHand, so I decided not to use the autotracing option," Velasco says. "Instead, I traced it by hand on the screen, using a mouse. This converted the bitmapped image into vector-graphics that are PostScript-compatible. By working this way, I could zoom in on specific areas of the art and maintain the detail of Bruce's drawing. When you use the autotrace function, the lines won't be as accurate."

When tracing the images, Velasco assigned the black areas of the drawings a 40 percent value of gray, then traced the outlines in black so he could easily compare the differences. (See Figure 7.) After tracing the lines, which took several hours, he deleted the bitmapped images, leaving only the vector-graphic lines on screen.

With the line tool in FreeHand, Velasco created a grid that divided the art into nine equal segments. (See Figure 8.) Next, using FreeHand's cutting tool, he began cutting the lines from each of the segments and placing them into what would be the reassembled art. So he could fill the areas with black, he had to make each segment a separate object. To do that, he closed the lines using the Join Elements command (Command-J). He repeated this procedure for each of the 18 segments. (See Figure 9.)

Once again, the two square images were joined together on-screen in the form of a large rectangle. Before making it into a square again, Velasco highlighted all the segments and grouped them together using the grouping function (Command-G). *Tip: While the computer now considers this a single object, the segments can still be easily taken apart.* (See Figure 10.) Again, grabbing one end of the graphic with the pointer tool, Velasco condensed the length until it equaled the width and formed a square. Working with Johnson's type design for the logo, he also added the words "INTER" and "ACTION" to the artwork using Futura Bold. (See Figure 11.)

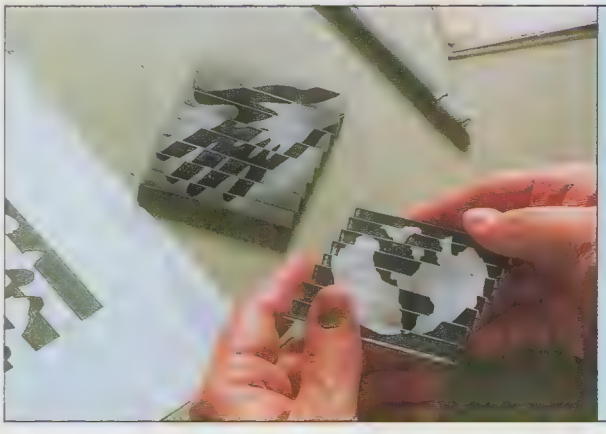
Since the globe would print green and the hand blue, Velasco again had to separate the images to produce mechanical art. To do this, he highlighted the entire image and chose Ungroup (Command-U). Then he selected all the segments that made up one image and separated them from the whole. *Tip: Hold down the shift key while moving art to keep it in alignment.* He repeated this procedure for the hands and added crop marks. (See Figure 12.)

The final PostScript image was then sent to HuntType, a local type service bureau, for 1,200 dpi final output. "I know that a lot of places use higher resolution for final output," says Velasco. "But the average human eye can't detect the difference between 1,200 and 2,400 dpi, so I don't see why we should pay for the higher resolution."

## TYPOGRAPHIC ELEMENTS

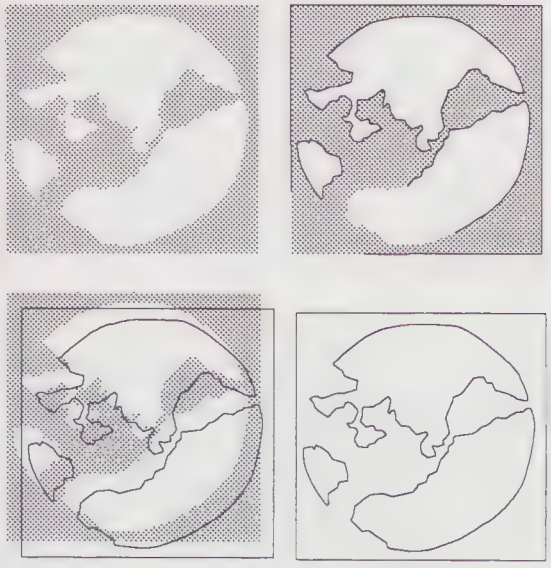
While Dean and Velasco were busy with the artwork, Johnson was working on the typo-

**4** After photocopying the assembled artwork, Dean scored the art for folding. An office window next to his drawing table serves as a lightbox; the firm's regular lightbox has a plastic top which could be marred by this work.

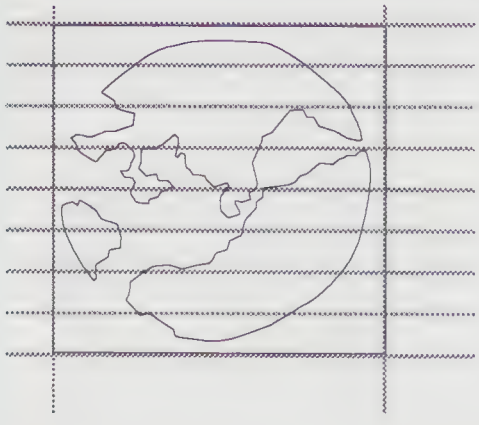


**5** The scored artwork is folded accordion-style to create the 3-D image. Looking one way, the globe appears; by viewing it the opposite way, the hand within the hand image can be seen.

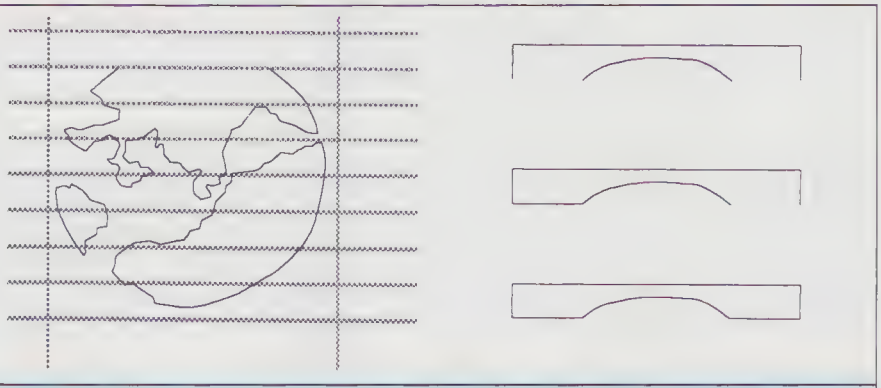
**6** Jerry Velasco scanned the art into Aldus FreeHand on the firm's Mac IIcx, which is equipped with an NEC MacSync monitor. The scanned image was condensed in FreeHand, which turned a rectangular piece of art into a square. Velasco compared the original art (left) with the reduced scanned copy as it came out of the Laserwriter II NTX.



**7** After scanning the image of the globe at 300 dpi (8½ x 11-inches), Velasco assigned the black areas of the drawing a 40 percent value of gray (upper left). Instead of using the autotrace function, he traced the images with a mouse (upper right). He then separated the scanned image from the traced object (lower left) and deleted the scan (lower right).



**8** With the line tool in FreeHand, Velasco created a grid that divided the art into nine equal segments. This computer version would mimic Dean's hand-drawn art which was created by cutting the two logos into strips of nine each and assembling them on a separate sheet.



**9** Using FreeHand's cutting tool, Velasco began removing the lines from each of the segments and placing them into what would be the reassembled art (left and upper right). In order to fill the areas with black, he had to make each segment a separate object. To do that he closed the lines (center and lower right) using Join Elements (Command-J).

graphic elements that would be combined with the art. "We knew there would be times when the embossed art would not be practical to use—print advertising, for instance," says Johnson. "So there would have to be a strong typographic image as well that could work as part of the entire logo, or stand by itself, when necessary."

What Johnson felt worked best with the embossed art was a horizontal bar and a vertical bar in the corner of each identity piece. The letter "C" in the word "Creative" is reversed out in the corner where the two bars intersect. The rest of the word "Creative" is reversed out of the horizontal bar. The bars gave the design a solid structure and, in fact, act as a grid against which the rest of the piece is laid. The initials "L" and "G" are reversed out of the vertical bar, aligned with the words "Leadership" and "Group." Johnson planned to set the initial capitals, "C," "L" and "G," in a different face than the other type. (See Figure 13.)

Johnson had been working with several different typefaces since the earliest rough sketches and settled on two: Modula Serif Bold (Emigre) for the initial capital letters in the logo and Futura (Adobe) for the rest of the type—Futura Black for the company name, Futura Medium for the names of the principals and Futura for the title, address and phone number.

"I liked Futura because it is simple and classic, in a modern sense," said Johnson. "Also, with so much else going on in the logo, I wanted a simple typeface that wouldn't make the piece any busier than it already is. The Modula Serif for the initial caps gave the piece a touch of individuality, something different than what I feel somebody else might come up with, given the same assignment."

Johnson then designed the form for the business card, letterhead and notecard in FreeHand because it was quick and he could manipulate the type easily. (See Figure 14.) "I designed in FreeHand mainly because I wasn't sure about what we were going to do with type, and this program gave me a quicker manipulation," says Johnson. "With FreeHand, the spacing between letters can easily be opened up or condensed very quickly and I can clone the letters without re-typing. If the type is going to be more extensive than name, address and phone number, then I will go into PageMaker and do a layout."

On the business card, the typographic elements and the logo appear next to each other with the telephone number placed in a green bar that bleeds off the bottom right

side. Johnson placed the names, titles and the address on the bottom of the card beneath the logotype.

On the firm's letterhead, the logo sits on the upper right portion of the page, while the bars and type bleed off the left side. The telephone number and address appear at the bottom of each sheet, set in Futura. The telephone number is reversed out of a green bar that bleeds off the bottom of the page. The address is aligned next to the telephone number and directly beneath the logotype at the top of the sheet.

When the typographic elements were complete, a mock-up of the folded art was applied to samples of each identity piece for viewing by the clients. (See Figure 15.)

## CHOOSING STOCK

Selecting paper for the printed pieces did not require much discussion. "When we started talking about colors and paper stock, we already knew that the clients would want to use recycled papers. Their company puts a lot of emphasis on the environment and ecology, so recycled paper seemed to be an obvious choice. I showed them Speckletone [French Paper Co.]. In fact, owner Jerry French had just sent us samples of some new colors that they had just made. So we used those in our presentation."

They knew that the paper would have to be strong enough to take the embossing without tearing and yet be able to stretch enough to allow the 3-D effect to show through.

They selected a Speckletone kraft for the business envelopes, oatmeal for the business cards, pale gray text for the letterhead and pale gray cover for the notecards.

**CHOOSING COLORS** Color ink combinations proved to be more difficult. "We included the clients in the color discussions, just as we had on everything else," says Dean. "We must have looked at a couple dozen color combinations."

Dean says he first leaned toward bright, primary colors. "But then we talked about it and, since a lot of their clients are large corporations, we wanted colors that would have a business-look to them."

Several colors were sampled, including different shades of green and blue as well as combinations of blue and brown. The winning colors were a dark purple and dark green (purple for the hands; green for the earth).

"The clients liked the dark green for its connection with the earth and the environment," explains Dean. "I liked it because it would work well for type if we wanted to do

**10** Once again, the two square images were joined together on screen in the form of a large rectangle. Before making it into a square again, Velasco aligned all of the independent objects, alternating the globe and hand segments. He then grouped them together using the Grouping function (Command-G). While the computer considers this a single object, the segments can be easily taken apart.

**11** Again, by grabbing one end of the image with the pointer tool, Velasco condensed the graphic until it formed a square. He also added the words "INTER" and "ACTION" in all caps and experimented with a seif (shown here) before using Futura Bold.

**12** Since the alternating segments would be printed in different colors, Velasco had to separate the images to produce mechanical art. He highlighted the entire image and chose Ungroup (Command-U), selected the globe segments and "INTER" and separated them from the whole. He repeated the procedure for the hands and then added registration marks.

text in a positive print, rather than the reverse. The green was dark enough that it would be readable as type."

As for the purple, Michael Priller liked that particular shade because of its association with the religious colors that are common to many faiths.

Velasco used the Macintosh to produce on-screen color versions of their selections to let the clients see the results of their choices before committing to print. (See Figure 16.) He used an inexpensive, but quite sophisticated paint program on the Macintosh called Color MacCheese (Delta Tao Software, Inc.).

"MacCheese only costs $100, but it is capable of producing 32-bit color video on a regular 8-bit color video card," says Velasco. "Unlike some of the really expensive paint programs, MacCheese uses a dithering process to create true 32-bit colors. It doesn't just create 'fake' colors either—when you're done, you've got real, 32-bit colors, ready for imaging."

He produced the color work by capturing the images on the screen using Exposure, a screen capture program (Preferred Publishers), then modifying them in MacCheese. *Tip: A faster method would be to keep the document in Freehand, cut it, and then paste it into Color MacCheese.* "The clients could sit there with us and say, 'Let's make that a little darker . . . no, how

# MARKETING A DESIGN FIRM

We felt there was a void in the local market," says Scott Johnson, explaining how the Indianapolis firm Dean Johnson Design, Inc., came into being. "When Bruce and I were working in an ad agency, there were many times we wished that there was a one- or two-man shop in town that you could call in to help out on special projects, or just to help get ideas started. And eventually, we decided to form our own company and be just that kind of shop."

Johnson and partner Bruce Dean met while they were working for Pearson, Crahan & Fletcher. Johnson had just returned from New York City where he had worked for five years as a designer. "He and I hit it off immediately," Dean recalls. "We'd collaborate on projects. He'd design and I'd do illustrations. But all the time, we kept saying, 'Wouldn't it be great if there was this little studio-type agency.'"

The two finally left the agency in 1987 and formed their firm. "We decided we weren't going to compete with anybody else," says Dean. "We didn't want to become a full-service ad agency. There are plenty of those in Indianapolis. We didn't want anyone to see us as a threat. We wanted to be a company that could work directly with clients on one side or with agencies on the other side."

They quickly became immersed in several jobs with major business clients—logos and brochure projects for Eli Lilly & Company, design work for Blue Cross & Blue Shield of Indiana, and brochures for shopping mall developers, Melvin Simon & Associates. They designed posters for the U.S. Clay Courts Championship tennis matches and, later, all the printed materials for the GTE Championships.

"We were really busy—and it was mostly just word-of-mouth," says Dean. "That, and the fact that we weren't anybody else's competition."

This non-competitive attitude has helped them attract projects from several local ad agencies. "They realize that since we aren't a full-service shop, they don't have to worry about us stealing their clients," says Dean. "We're just here to help out when they need us, and they understand that."

**Dean Johnson Work** Leasing brochure below for Melvin Simon & Associates for a New Jersey development project. (Design: Scott Johnson, Bruce Dean. Illustration: Bruce Dean.) At right, a sesquicentennial poster and program cover for Broadripple Village, painted in acrylic by Bruce Dean.

about a little lighter? . . . now let's see it darker again . . .' and I could simply vary the shadings until they were happy with them. Then all we had to do was match the screen colors as close as we could to the Pantone colors." The dark green shade was specified as Pantone 3298U, while the purple was Panrone 275U.

The mechanicals for the printer were taken directly from the computer and output with crop marks in place. With the mechanicals, the designers also provided a color-separated master of the logo (at 400 percent of actual size) which was reduced and used in all of the identity pieces. (Refer to Figure 12.)

## PRODUCTION

Dean and Johnson worked through a print broker, Gary Ransburg, to arrange for the printing and embossing. Midtown Printing of Indianapolis was commissioned for all the printing work. Universal Engraving of Kansas City, Mo., produced the die and an Indianapolis embossing firm, D.E. Baugh Company, was chosen for the embossing.

The press run was small—1,000 pieces of letterhead, envelopes, notecards and 500 business cards each for Priller and Weesner.

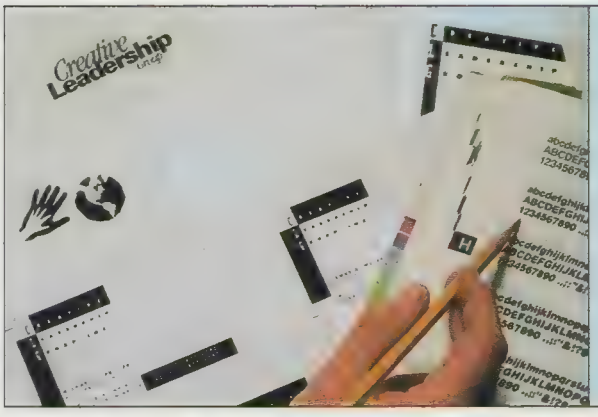
The business cards and letterhead were printed two-up, while the notecards were printed three-up because the principals would need more of them.

Dean instructed the embosser to make the impression as deep as possible without tearing the stock. Don E. Baugh says that, while the design was unique, the work was not difficult and the Speckletone paper held the emboss very well. "With this type of job, registration is very critical, so it is important that printing be done on a quality press," he adds. In the initial proofs, the registration was off slightly. But by adjusting the position of the dies, the problem was corrected.

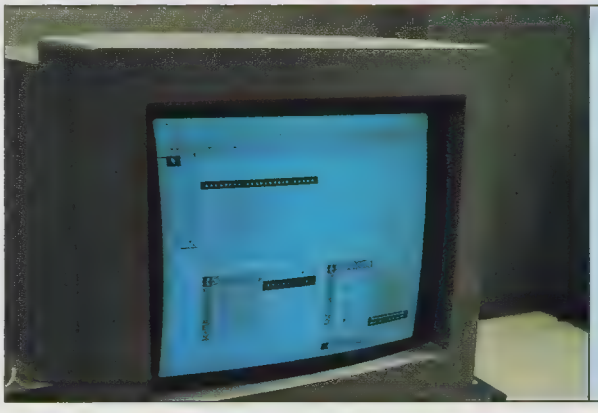
When it came to producing the finished pieces, Johnson readily admits that he was "nervous through the whole thing . . . there were just so many different issues to contend with in getting the art and the embossing to work just right."

The results, however, were worth the effort. "I'm thrilled with how well it works!" says Johnson. "We're getting great response to it. The day that the printed pieces were delivered, we actually had people stopping by the office just to see them. I hope that it will generate more ideas and more people coming in here to try different things." ■

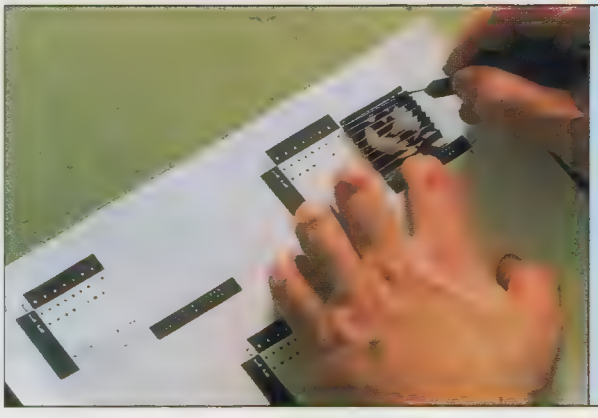
*M. William Lutholtz is an Indianapolis-based freelance writer.*



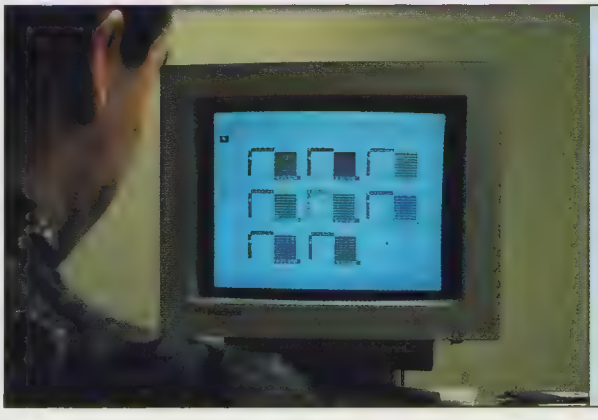

**13** In determining the typographic elements for the logo, Johnson's goal was to create a strong graphic image in type that could be used without the 3-D logo when embossing was impractical. After working with a variety of attempts, he settled on vertical and horizontal bars that would frame the type.



**14** Johnson worked on the Mac in FreeHand to create a mock-up and later mechanicals for the business card (shown here), letterhead and notecard. FreeHand allowed him to manipulate the type quickly. The typefaces he chose include Modula Serif Bold (Emigre) for the "C," "L" and "G" and Futura (Adobe).



**15** With the typographic elements complete, Dean applied samples of the 3-D logo to a mock-up of each identity piece for approval by the clients. Shown here is a laser print of the business card.



**16** Using Color MacCheese software, Velasco prepared a variety of color options for on-screen viewing by the clients. These options included green and blue in several shades, blue and brown, and the winning combination, purple and green.

# Customized Type in an 'Instance'

***Follow designer Margery Cantor as she uses the new multiple master type technology for a signage project.***

**By Susan E. Davis**

When they crafted metal typefaces by hand, 18th century typeface designers like John Baskerville and William Caslon took into account the fact that the eye perceives letterforms differently depending on their size. The men painstakingly carved the smaller sizes with slightly larger x-heights to make them more readable, and they lovingly sculpted larger sizes with more delicate and refined shapes to enhance their aesthetics. It is said that Caslon spent 10 years refining his classic fonts.

But with the headlong rush into phototypesetting 20 years ago—a transition that revolutionized the industry with speed and efficiency—letter sizes were photomechanically scaled from one master type design, leading to decreased legibility at small point sizes and a lack of grace at large sizes. Then, with the transition from photo to digital type over the last decade, this standard of producing a range of type sizes from just one master size was inherited.

While Caslon and Baskerville would not have been pleased with the loss of quality that resulted from the type industry's abandonment of optical compensation, there is little doubt that if they were here today, they would embrace the industry's newest technology. Developed and first introduced by Adobe, Inc. as two digital typefaces (a serif and sans), the Adobe "multiple master" technology, as the company is calling it, provides graphic designers working on the Macintosh an unprecedented level of typographic freedom. It allows them to generate fonts which are visually suited to the size at which they will be printed, while at the same time to remain true to the face's original weight, scale and proportion.

"What Adobe multiple master technology does," explains Fred Brady, Adobe's manager of new typographic development, "is take all the good stuff from the hand-cut metal days when each size of every letter was cut individually, and it incorporates other elements that were impossible then, such as

**New Face for a New Facade**
Graphic designer Margery Cantor and Denny Abrams of Abrams/Millikan and Associates in Berkeley, Calif., decided to use the new multiple master sans serif font on the facade of the Pacifica radio station building. To try out the letters on the 25 x 15-inch cardboard model of the facade, they used the new multiple master sans serif with the font creator tool and Adobe Illustrator. The new letterforms were laser printed and enlarged to fit the ½-inch scale of the building. Fourteen inch-high letters would ultimately be embossed onto the finished building's stucco facade.

Photos by Giampiero Benvenuti

**1** A design matrix, with four design axes showing weight and width variables, features the new Adobe multiple master sans serif designs in each of the four corners: light condensed, light expanded, black condensed and black expanded. All other letters in the matrix were generated by mathematical interpolation from the master designs. Although other programs have allowed type designers to create type designs through interpolation, the multiple master technology allows any type user to make interpolations by selecting any combination of those end designs.

an unlimited number of weights and widths."

In its explorations to help designers solve type and design problems, Adobe Systems Inc. is just completing an intense two-year project devoted to designing the two typefaces and developing the Adobe Type Manager (ATM) font rasterizing technology needed to generate the multiple master fonts.

## IMAGINE A MATRIX

Quite simply, the technology works through the mathematical principle of interpolation. *Tip: In math an interpolation allows one to locate any point that exists in a series or on a continuum between two points.* The designer selects a particular "instance" between two or more master designs, and thereby produces a customized typeface. (An "instance" is the term Adobe coined to describe a specific interpolation between two or more master designs.)

"The idea of interpolating between masters is not a new one," states Brady. "Programs like Ikarus [URW] have allowed type designers to create type designs through interpolation for years. What is new is that with multiple master it's actually type users who are making interpolations to satisfy their particular needs."

To visualize how the technology works, it helps to look at a matrix with four master designs which define the weight and width variables of one face. (See Figure 1.) Master designs are located on each of the four corners of the design matrix: a light condensed, a light expanded, a black condensed and a black expanded. Designers can select any instance of weight and width within that design matrix.

"The letters at the corners [of the matrix, the master designs] were drawn by our type designers; all the other letters in between were interpolated," explains Brady. "The point is you're able to select any combination of those end designs." (See Figure 2 on page 93.)

Although the technology currently is used only within the new PostScript typefaces, Brady anticipates the day when many other manufacturers will provide multiple master typefaces, and when all software applications will incorporate the ability to use them interactively. But for now, multiple master typefaces can be used on any Mac, PC Windows or UNIX plat-

*(continued on page 92)*

# IN-HOUSE TEAMWORK

With no sans serif face in its Originals collection, Adobe's typeface design department took the opportunity afforded by the multiple master project to develop a new sans serif typeface. Sumner Stone, Adobe's director of typography when the project was given the go-ahead two years ago, did some preliminary drawings; and although these first drawings were never actually used, they were reviewed by the Adobe design team, typeface designers Robert Slimbach and Carol Twombly, each of whom began working on two different weights and widths of the roman and the italic designs.

Fred Brady, manager of new typographic development, recounts, "We started working on the four end designs and then in order to see what it looked like in between we interpolated each instance character by character using Adobe Illustrator. If we wanted to interpolate 10 letters across and 10 letters down, we ended up with a matrix of 100, and then we had to do that for all the letters we had to test," notes Brady.

Slimbach and Twombly worked closely together on the designs, not only because of the enormity of the project, notes Brady, "but partly because we did not want the typeface to have the real strong personality of any one individual."

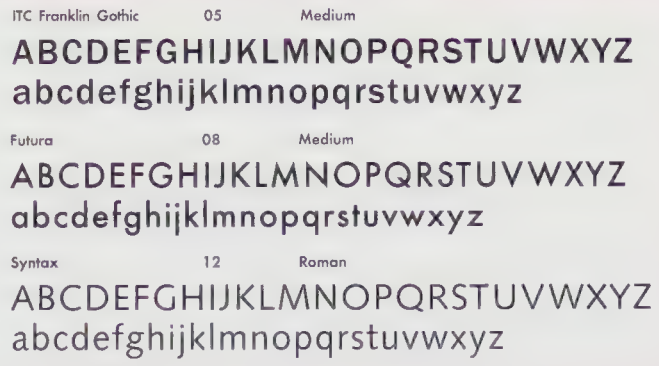



**Figure 1** Before tackling the design of the new sans serif, Adobe type designers Robert Slimbach and Carol Twombly researched the three major groups of sans serif faces—grotesque, geometric and humanistic. Here, Franklin Gothic represents the grotesque group; Futura represents the geometric; and Syntax the humanistic.

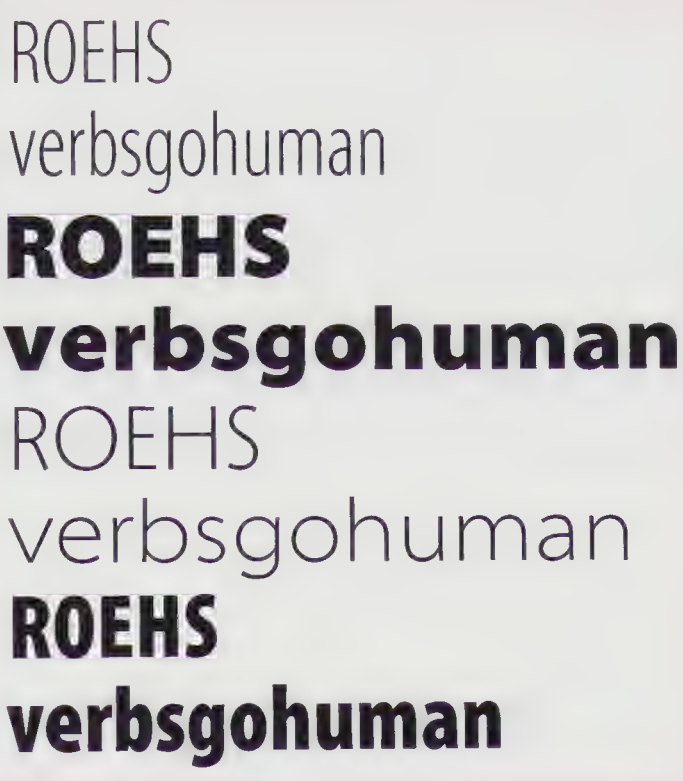



**Figure 2** Each working on a different weight and width of the sans serif, the two designers began styling control characters that contain all the basic elements in the alphabet—vertical stems and diagonal strokes, round shapes, ascenders and descenders. These letters served as tests that Slimbach and Twombly experimented with to review the stroke weights, the proportions, and the general style.

## THE SANS DESIGN

As part of their research, the designers studied the three different groups of sans serif design—grotesque, geometric and humanistic. (See Figure 1.) "We knew we wanted something that was a little different, but that was influenced by the three groups. I think the new sans serif ended up with a little bit of each of the groups in it," says Twombly.

Initially, the designers selected only a few roman letters to work on that contained all the basic typographic elements in an alphabet—ascenders, descenders, vertical stems, diagonal strokes and round shapes—which resulted in the words "ROEHS" and "verbsgohuman." (See Figure 2.)

Brady explains these initial trials. "These letters were early tests that Robert and Carol experimented with to see what the stroke weights, the proportions and the general style would be like. Things have evolved a lot since this point,

*abcdefghjkopq*

*rstvuwxyzn*

**Figure 3** Slimbach tested out some italic letters early in the process; final letterforms are included for comparison. "If you look at the final version," observes Brady, "you'll notice they're not really that close. The early one provided inspiration. Some of its original spirit has been transferred into the final letterforms."

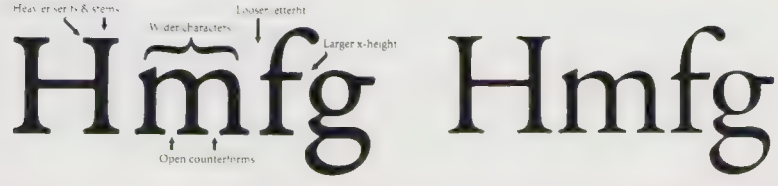



**Figure 4** To show the difference between visually scaled small and big sizes in a serif design, sample letters in the two sizes are enlarged to the same capital "H" height. The six point letters (left) have a larger x-height, more weight, more space in the counter-forms, and looser letter fit, and they are more uniform. The 24 point letters (right) have thinner stems, and there is more contrast between the thin and thick strokes.

but these are the actual seeds."

Slimbach also experimented early on with italic letters. (See Figure 3.) As Brady notes, "If you look at the final version, you'll notice they're not really that close. The early one provided inspiration."

The entire process required an endless series of refinements. Finally ready for release in the last quarter of 1991, the typeface's range is extensive in both width and weight. (Refer to Figure 2 in main story.)

One of the crucial design decisions made along the way, however, was not to include visual scale as an option in the sans serif design. "You don't need visually scaled sizes as much because sans serif designs tend to be much more sturdy. They have a large x-height and are highly readable. Visual scale didn't seem to be a big enough factor to do another whole set of designs, whereas in serif designs that dimension is more important," explains Brady.

## THE SERIF LETTERS

Slimbach did include visual scale, in addition to weight and width, when designing the new serif font. Known as Minion, the face was originally created by Slimbach as an Adobe Original typeface.

"Basically, I expanded on the display version of the font and the text weight, which was more or less a 10 point size," states Slimbach. "The multiple master technology really fit the typeface. It allowed me to do what I wanted to begin with."

A good way to show the difference between the visually scaled small and big sizes in a serif design is to enlarge the small letters. (See Figure 4.) In the smaller size, the letters have a larger x-height, more weight, more open counterforms, looser letter-spacing and are generally more uniform, while in the larger size the stems are thinner and there is more contrast between the thin and thick strokes.

Visual scaling between the two sizes in Minion creates essential subtleties that can have a decisive effect on the readability and overall look of copy. (Refer to Figure 5 to compare copy that has not been visually scaled with some that has. The head and copy on the left have just been mathematically scaled from one design, while that on the right has been visually scaled from the two sizes.)

## FINAL TOUCHES

Fine tuning the designs is what took most of the designers' time. "A good design," notes Brady, "is about .01 percent the seed of a good idea and then a zillion details that all must fit together."

At the time of this writing, in May 1991, the team was still changing shapes and adding kerning pairs. "Each letter has to work in harmony with each other letter," notes Slimbach. "And each weight has to work in a practical way with each other weight, so there's a lot of adjusting and proofing."

One of the technical considerations the type designers had to take into account, says Robert Koch, Adobe's Product Marketing Manager for Macintosh fonts and multiple master typefaces, is matching everything up. "The data points have to match exactly from one end of the design axis to the other, so when you do interpolations you don't go out of control."

Koch also notes the technological basis for multiple master is the Adobe Type Manager (ATM). Advances in ATM engi-

*(continued on page 92)*

*(Continued from page 89)*

form, within any application that currently supports Adobe's Type 1 fonts. Each font software package comes with a ready-to-use default set of predefined instances, which provide a complete family of sizes, widths, weights and styles. In addition, the package includes a font creator program, to make it possible for the user to generate more specific instances for specific needs.

"But as application developers include the ability to choose an instance within an interactive application, the need for the font creator will be lessened. We're working on incorporating this ability now into our own software products," says Brady.

## GOODBYE ORPHANS

In addition to the design flexibility it offers, multiple master addresses the practical concerns of typesetting as well, such as widows, orphans, rivers, hyphenation and cramped letters.

Cramped or distorted letterforms are often created when letters are forced to fit by artificially compressing them horizontally into a certain space. But by adjusting the width of a multiple master typeface, for example, type can be compressed without distortion because the master designs control the integrity of the interpolated instances.

For instance, designers are often faced with the dilemma of squeezing a long headline into a much shorter width. Artificially condensing a display face can increase or decrease a face's crucial stroke weight, adversely affecting its readability. Multiple master preserves weights and design. (See Figure 3.)

Another feature of some of the multiple master fonts is that they can be subtly adjusted to eliminate widows and orphans. (See Figure 4.) By slightly condensing the type—that is, by selecting a slightly more condensed instance so subtle that the eye cannot discern it—and by slightly decreasing the word spacing—letters can be pulled up on a line without tampering with the weight of the letters.

An unexpected use for the technology is typeface emulation: Multiple master typefaces can be adapted to mimic other faces. (See Figure 5 page 94.) This capability could be useful when a document composed in one typeface, say ITC Garamond or Avant Garde Bold Condensed has to be output on a printer in a totally different face, say the new Adobe multiple master sans serif.

*(Continued from page 91)*

neering, first introduced to the market in 1989, established the critical mathematical calculations needed to interpolate between master designs. The team of engineers responsible for ATM technology, therefore, played a crucial role in multiple master's development.

"In order to call up the interpolation algorithms," explains Koch, "what are called 'backdoors' had to be written into ATM. The engineers had to define and write ATM backdoor calls so that when you're in the font creator application and you want to create a particular instance, the program will use that backdoor call to do the mathematics involved with interpolation and pick the point on the matrix where that outline is and then create it."

Yet another team of engineers was responsible for devising the font creator tool, which allows users to custom design a typeface. Another team worked on font production tools, so that other companies can build their own multiple master typefaces. Still another team has developed documentation so that application vendors can implement the ATM backdoor call routines in their own software programs. That team is also writing an addendum to the Type 1 specification book that explains how to create multiple master fonts. The book's goal is to encourage others in the industry to develop a variety of multiple master fonts so they become widely available. "We will also work with manufacturers like Agfa Compugraphic and Linotype who license our tools now and who are interested in producing their own multiple master fonts in the future," states Brady.

Adobe and its engineers envision a time when other alphabets, including Japanese, Russian and Arabic, will be available using multiple master technology, and when multiple master fonts will be built into PostScript printers. "Every day we are still learning what multiple master technology can actually do," summarizes Koch. "It touches everything. At some point in time every project will have to be changed or altered or updated to take advantage of some of its features. I know there are things we haven't even thought of that this technology touches."

Size and Visual Scaling

To accommodate the limitation of the human eye and the way in which we perceive letterforms, type needs to be designed so that it performs well at all type sizes. In the early days of typefounding, type was hand-sculpted in metal, resulting in optimized, or visually scaled, letters for each point size.

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To accommodate the limitations of the human eye and the way in which we perceive letterforms, type needs to be designed so that it performs well at all point sizes. In the early days of typefounding, type was hand-sculpted in metal, resulting in optimized, or visually scaled, letters for each point size.

**Figure 5** What improves the readability and overall look of a serif multiple master type is the ability to scale it visually between small and large sizes. Note that the head and copy on the left have been scaled from just one Minion design, while the head and copy on the right are visually scaled at 10 point for the text and 18 point for the headline.

problemdiscoverysolution

2 The versatility of the sans serif in both width and weight design axes is demonstrated in this example. "This shows the dynamic range of the font in one continuous, beautiful spectrum," observes Fred Brady, Adobe's manager of new typographic development.

3 Multiple master type can be compressed into a specific space without distortion (top) when the user chooses a slightly different instance. In comparing the 24 point sans serif headline on the top with the 24 point Helvetica Bold headline below, note the vertical strokes in the artificially condensed letters (below) are narrower in proportion to the horizontal letters.

**Film Workers Reject Settlement**

**Film Workers Reject Settlement**

4 Widows (an example of which is shown at left) and orphans can be eliminated by slightly condensing the type and by slightly decreasing the word spacing (shown at right). Note, however, that the weight of the letters is the same in both paragraphs.

At the gates of the forest, the surprised man of the world is forced to leave his city estimates of great and small, wise and foolish. The knapsack of custom falls off his back with the first step he makes into these precincts. Here is sanctity which shames our religions, and reality which discredits our heroes.

At the gates of the forest, the surprised man of the world is forced to leave his city estimates of great and small, wise and foolish. The knapsack of custom falls off his back with the first step he makes into these precincts. Here is sanctity which shames our religions, and reality which discredits our heroes.

To learn more about how this technology works, *Step-By-Step* documented the first commercial use of this new technology in a signage project for the facade of a radio station in Berkeley, Calif.

## USING THE NEW TYPE

Although Margery Cantor admits she is not a big sans serif fan, she recently encountered a design opportunity that was an ideal candidate for trying out the new sans.

Architect Denny Abrams of Abrams/Millikan and Associates in Berkeley, Calif., had contacted Cantor in February 1991 to discuss a typeface to be used on the facade of a new radio station in Berkeley. "I wanted a typeface that would reflect the time when radio was in its heyday in the early 1930s," says Abrams, "a clean, modern, sort of deco style." He had picked Avant Garde, but was having second thoughts. And Cantor didn't like Avant Garde: "I told him I thought it was incredibly ugly—certainly not graceful enough to be used as a decorative element on a building—so I volunteered to hunt down some other faces."

Even though she did come up with other examples, Cantor felt the sans serif would be "perfect," so she waited until the day multiple master was announced and invited Abrams over to her studio to view it on her computer. (She had been given an Alpha copy by Adobe much earlier for her evaluation.) "Margery found this type that was more elegant than anything else she showed me," recounts Abrams. "Not only did it have to fit and speak well with the building, it had to fit within a specific amount of space which was limited by the architecture. So we played with thicknesses and shapes. We kept blowing the letters up on a photocopier to check how they looked to size. When they also registered quite nicely on the model [which is shown on the opening spread of this article], we decided to go with them."

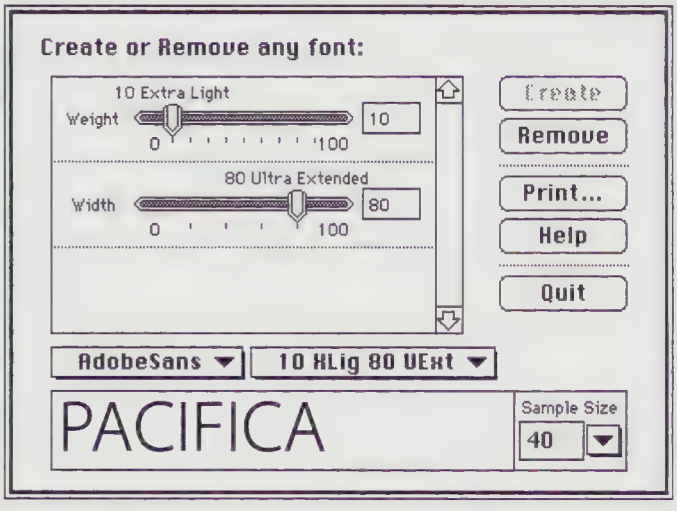
The model, a facade built of

copyfitting **copyfitting**

copyfitting **copyfitting**

**5** Type emulation, or the ability to adapt multiple master typefaces to masquerade as other faces, is useful when a document composed in one font has to be output on a printer in another font. By matching each letter precisely to the letter width of the font in the document, some of the multiple master typefaces will be more capable of doing this than others. For example, the new sans (bottom left and right) can be made to match 48 pt. ITC Garamond (top left) or 48 pt. Avant Garde Bold Condensed (top right).

**6** Designer Margery Cantor first selected an instance using the font creator program. The sliders define the axes for weight and width. She selected the percentage she wanted and clicked the Create button to generate an instance. A specimen sheet of the selected instance is printed when the Print button is clicked. Although sample text is displayed in the font creator text box, Cantor had to import the instance into Illustrator to manipulate it .




cardboard, measures 25 x 15-inches. To try out the letterforms on it, Abrams took the letters Cantor printed out on her laser printer and enlarged them to fit the ½-inch scale of the building.

**VERSATILITY OF A FACE** "It was while we were trying out various weights and sizes that I realized how cool the technology is," exclaims Cantor. "We really played with it a lot until we came up with a weight that was really great. It had to be bold enough and full enough and not look too spare, but it also had to fill up the space and not look too clunky."

Cantor likens the process of making an "instance" in a multiple master font to picking a shirt from the rack at a clothing store. "You try on one size, and if it doesn't fit, you simply try on another." Based on the interpolations of the master face, she continues, "it allows you to create a brand new font that has any width and any weight, and all I had to do was decide the width and weight."

She cautions, however, that this tool is not an interactive program; it simply provides a numerical representation of an interpolation and an on-screen visual guide of the instance. "You cannot manipulate the letterforms in the font creator tool like you can in Fontographer [Altsys], for example, where you're drawing your own custom letterforms. With the font creator tool, you're pointing to something and saying this is what I want." (See Figure 6.)

For the Pacifica project, Cantor says she could have made 15 instances at a time, for example, and then gone into Adobe Illustrator (an object-oriented draw program) to create her line of type in each one of those instances. "But instead I chose to create an instance or two, and then go back into Illustrator to manipulate the type." Apparently, this back and forth from the font creator tool to Illustrator didn't bother Cantor. "It certainly made me think a lot about how a letterform is created."

Working in a fairly light range, Cantor found it easy to select a weight. "I already had a good sense of what weight was needed from the type Denny had first chosen, because of the way he was going to reproduce it on the structure. So it was while working on the width that I found myself applauding the folks in Mountain View [Adobe], because with the weight settled I just kept making instances and holding them up against each other," says Cantor.

She used a window as a light table in order to see the incremental differences she was making, always producing one letter at a time. (The size she used in Illustrator was 1290 points, so that one letter would fill an entire 8½ x 11 laser print.)

**7** With the help of a new digital color imaging processing system called Cactus, Abrams had a continuous banner made of the radio station's call letters, printed out at 400 dpi on a 44-inch-wide color printer. He temporarily mounted the banner on the balcony over the building's entrance to make sure the eight-inch letters could be clearly read.

"I'd hold up a couple of letters or Denny would and we'd look at them and print some more out. After several tries, we came to an instance that worked."

First, they customized the type for the word "Pacifica" that arches around an opening on the second floor of the building. The 14-inch letters would be embossed on the facade. Then they designed the type for the station's call letters that wrap around a balcony over the front doorway. The letters there, cut from bronze, are eight inches high. "There wasn't as much space for the call letters so they had to be narrower and longer," notes Cantor. "It's clear they are from the same family, but there's a little different flavor to them."

**THE BANNER** Abrams asked a friend, Harry Bowers, one of the founders of a new digital color imaging processing system, Cactus, to make a banner of the type for the balcony. So Bowers used one of Cactus' Mac-based machines to size the type to scale using the special tiling and paneling software in the Cactus system. Cactus read Cantor's PostScript files, which were created in Adobe Illustrator and saved as outlines. The type was then printed out with a resolution of 400 dots per inch on a 44-inch-wide color printer, which contains a roll of paper or (clear or translucent) polyester 500 feet in length.

Using the new reproduction technique, Abrams now had a continuous banner of the call letters. (See Figure 7.) This allowed him to temporarily mount the banner on the unfinished facade to check the effect. "It was great to be able to make a full-scale mockup of the sign," notes Abrams.

Now that the new building is finally completed, the architectural team (including Abrams, Richard Millikan and David Tractenberg) is hearing nothing but rave reviews. "The people at Pacifica love it," he says. "I think it's fabulous."

Observes Cantor, "Denny's thrilled with the type because it meets all his needs. For me it's really, really exciting to see the potential of the sans serif in a real application. I just love how it looks; at a large size it's very beautiful."

## TRADITION & TECHNOLOGY

Graphic designers who care deeply about the aesthetics of letterforms and who are willing to take whatever time and energy are needed to ensure that, have been able to customize type on the computer for some time now. But what few could ever have imagined—especially the masters like Baskerville and Caslon—is how quickly and effortlessly this can now be done by every PostScript type user. In this sense, then, multiple master is an appropriate name; not only does it convey how the technology works by interpolating from master designs; it also alludes to the masters of typography—to the tradition of excellence and beauty in type design to which Baskerville and Caslon devoted their lives. ■

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*Susan E. Davis, a freelance writer who specializes in the graphic arts, is senior writer for* Step-By-Step Graphics.

# Retelling 'Beowulf' in Gouache

***Using a gouache technique that achieves the appearance of oil, John Rush illustrates this epic tale of dragons and warriors, formats the book's layout as well as creates a drop cap and decorative page border.***

By Richard Edel

There is an old newspaper headline above John Rush's drafting table that reads, "John Rush—The Thinking Man's Illustrator." It was presented in jest by former co-workers in recognition of his painstaking approach to illustration.

But if the artist's latest project is any indication, their perceptions were right on target. The 41-year-old illustrator is taking on a self-initiated project of heroic proportions—recreating "The Legend of Beowulf" as an illustrated children's novel.

In case you too slept through English 101, "Beowulf" is an eighth century epic tale set in Scandinavia that tells of the hero Beowulf's victories over the monster Grendel and Grendel's mother, his battle with a dragon and, finally, his death and burial. Written in Old English poetic style, it is not an easy read.

But what may be even more difficult than simplifying and rewriting the story is the challenge of visualizing one of the greatest tales ever told. Finally, there is the sticky problem of selling the concept to a publisher and obtaining a suitable advance to create the approximately 12 detailed paintings that Rush estimates the book will require.

*Step-By-Step Graphics* followed the artist in the creation of his first painting, documenting his thought processes, his distinctive gouache painting technique, and his efforts to turn a speculative idea into a spectacular project.

## VISUAL RESEARCH

Although the Beowulf legend is fiction, many of the visual elements that will appear in the illustrations—swords, shields, Viking boats—draw upon historical fact. For this reason, the artist begins his work not in the studio, but in the library.

**Dragons and Warriors** Using a gouache technique that looks like oils, John Rush painted an illustration for "The Legend of Beowulf." The artist initiated the project himself and hopes to secure a publisher later.

Research is the first step in the creation of believable images, and Rush says he finds a rich source of inspiration in historical artifacts and books about Vikings. Several of the books he consulted for this project included: "The Viking World," by James Graham-Campbell (Ticknor & Fields, 1980), "The Vikings," by Frank R. Donovan (American Heritage, 1964 ), and "The Northern World, History and Heritage of Northern Europe," edited by David M. Wilson, (Abrams, 1980). "As an illustrator, you can't go wrong with good research," the artist says.

Rush discovers there is very little historical material available about this specific period, but learns that since the Vikings were descendants from these people, he could adapt some of the material on costumes, arms and armaments from that period, which occurred some 200 years later.

## THUMBNAIL SKETCHES

Next, the artist selects several scenes from the story to illustrate. He stresses the importance of allowing his imagination free reign to create, and then quickly captures the mental images with pencil thumbnail sketches. (See Figure 1.) While he sketches many different scenes throughout the book, including the dragon hoarding a huge pile of gold, Grendel's mother attacking Beowulf and other key scenes, he only plans to paint one image. If he sells the concept to a publisher, he will return to these sketches for ideas.

"I truly believe that creativity originates in the subconscious. Once the ideas are down, your consciousness takes over, making adjustments and moving things around. Your intellect is the critic, but it doesn't have the ideas. Ideally, you want to give your subconscious as much freedom as possible, because it is going to save you as an artist."

**STICK TO THE ORIGINAL IDEA** The closer you can come to the spontaneity and excitement of the thumbnail in the finished piece the better, he adds. For this reason, Rush tries not to deviate from the composition and value of his thumbnails.

"One thing I'm learning as an illustrator is to try to keep as close to the original idea as possible. This is usually the best inspiration you will ever have. Each time you develop it, it will lose some of its spontaneity and freshness. And a painting is even further removed from the original idea," he says.

"But don't feel bad about this process," Rush adds. "I've seen preliminary sketches [of paintings] by the great masters. And they had exactly the same problem."

In the first painting, Rush chooses to place Beowulf and his men in a precarious situation: They are standing on the brink of a high cliff in dense fog, just moments before they encounter a raging dragon. (See Figure 2.) "This is almost a prelude to the focal point of the fight between Beowulf and the dragon," notes Rush. "I like to

Final Combat
OG rolled in from the sea and settled thick and dark upon the forest. Beowulf and his warriors climbed a rocky knoll and stood facing the cave of the fire-dragon. For many miles back they had been seeing the deep tracks of the monster crisscrossing the forest and now all around them lay gigantic foot-prints so large a grown man could lie down in one and reach out in all directions and not touch the edges.
They gazed into the tracks trying to imagine a creature that could make such marks. Then they turned, grim faced, and stared at one another and said not a word.
Finally, the king stepped forward and called out:
"Hear me now o cursed demon ! Beowulf, son of Edgetheon and lord of all Gretaland, have come to avenge the loathsome evil you have unleashed upon my people and to lay claim to the treasure that you have so wrongfully hoarded. I call you to battle: to pit your strength against mine. Come out and prepare to greet your death!"
The words echoed off the stone cliffs and faded into the fog. The men stood motionless, grasping their weapons tightly, heads bent forward straining to hear or see any signs of the monster, but all around them was nothing but gray silence.
OG rol
upon t
rocky
dragon
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forest
prints so large a grown man
directions and not touch the

**All on Spec** To entice a future publisher, Rush also sketched a cover (left), and created a layout (center), drop cap (right) and decorative border.

illustrate a scene just before an event like this so the image does not hit the emotional apex."

To create the specific situation, the artist thinks like a storyteller. He considers how the dragon will be positioned, where everybody is standing, the topography of the land, the mood, lighting and atmosphere. In short, he considers all of the details the heroes must overcome in approaching the dragon and edits them down to a powerful image that helps tell the story.

"It's impossible to show everything in the illustration, but what I suggest in the image also must appear in the story. One has to complement the other," the artist says.

It is interesting to note that the artist made a conceptual blooper in his initial sketches–having the dragon sneak up on Beowulf from below. He does not correct this problem until later.

## PHOTO REFERENCES

Once the direction for the initial painting is clear, the process of creating photo reference begins. On most assignments, the artist has a budget for costuming and models, but on a speculative project like this, he economizes by creating the costumes and modeling the poses for every figure, while his wife, Danea, shoots the photos.

Rush considers creating makeshift costumes an art. "I really don't need a metal helmet or sword, I need something to show me size, shape and scale. Then I can supply the textures. The most important thing in creating this kind of reference is the gesture of the body and the design of the drapery," he explains.

"In some ways I prefer to be my own model because I know what I want. And over the years, my wife has gotten to be a pretty good photographer," Rush adds. (See Figure 3.) Photos are shot with a Canon A1 35mm camera with a zoom lens (35mm to 105mm). Rush sets his camera at waist- rather than eye-height because this maintains the body's proportions. *Tip: Set at eye height, the top of the body appears to be larger than the bottom.*

**REDRAW RATHER THAN TRACE** While good photo reference is essential in helping the artist visualize the proportions of the human figures, the folds in clothing and the interplay of light and shadows, Rush avoids the temptation to trace his references.

"I've learned over the years that you don't trace; you redraw. First you photograph your references as accurately and dramatically as possible, then redraw them to simplify and emphasize the action," he says.

## REFINING THE SKETCH

In the process of refining his pencil sketch, the artist decides to trade off high drama for description. Such choices are the practical and aesthetic refinements that give balance to an illustration, he says.

In the thumbnail, Rush gave Beowulf a heroic stance and drew the faces in profile. In the refined sketch, he turns Beowulf to face the viewer. This sketch shows a hierarchy of importance with Beowulf in the most important position. All of the characters are uncertain and nervous about where the dragon will turn up. An additional change is the placement of a character in front of Beowulf to add depth to the composition. For his more finished sketches, which are about 4 x 6-inches, the artist uses a No. 2 and an 8B or another soft lead pencil that will produce good darks. (See Figure 4.)

"The dramatic silhouette in the thumbnail definitely is stronger," says Rush. "You can almost feel the wind and rain in his face. But I can tell you more about [the characters] by turning them around a little bit. So I sacrificed some of the dramatic aspect for better description. I can get away with it in the first illustration because this is not an action scene. Besides, there will be plenty of blood and thunder inside," he adds.

**CHANGE OF DIRECTION** Unfortunately, Rush is so confident in his thumbnail idea of placing the men on a cliff over the dragon that he gets ahead of himself. "I was so sure this idea was going to be brilliant that I went directly to the finished black-and-white illustration," he says.

It turns out to be a mistake, pointing up serious flaws in scale between the human figures and the dragon. (See Figure 5.) Instead of a beast of mythical proportions, the illustration defines the dragon's relative size as being not that much bigger than a two-bedroom bungalow. And instead of a fearsome cliff on which the men would be trapped in terror, the illustration defines the cliff height as being about four-times the size of a man, or about 25 feet. Not even the Vikings who play football in Minnesota would shrink from such surmountable obstacles–much less legendary heroes.

"This is an example of how you screw up as an illustrator," Rush admits. "I thought it would be interesting to show the dragon coming up from below, because dragons are hardly every pictured doing that," the artist says.

"But I got the sketch done, and it just didn't look right. The dragon looked too sneaky. His pose is one of guile and deception,

1 Rush allows his imagination free reign in order to capture the spontaneity and excitement of the storyline in thumbnail sketches. The first six sketches illustrate the ceremony in which the queen crowns Beowulf king of Geatsland. Other sketches depict various key scenes in the book.

3 The artist models for reference photos while his wife Danea works the camera. His costume consists of an inside-out sweatshirt, a towel held up by his belt, army fatigues tied with rope, a trash can lid shield, two yardsticks taped together and a bedspread cape. His helmet is foam board, sliced into orange-like sections.

2 In planning the image, Rush sketches a thumbnail showing Beowulf and his men standing on the brink of a high cliff, just before they see the dragon. The drawing shows placement and stances of the characters.

4 Rush positions his photo references into an interesting composition, then begins redrawing them to add action, description and drama. The composition is clearly hierarchical, with Beowulf in the central position.

whereas this dragon is not only proud and powerful, but in a psychotic rage because someone has stolen the gold he's been hoarding," he adds.

When it becomes obvious that something is not working, Rush says he stops immediately and rethinks his approach. "You can't force it. You've just got to stop what you're doing and reassess. I sometimes like to go away from a piece and come back later. Then you tend to see your mistakes immediately."

**NEW SKETCHES** In this instance, correcting the problem involves going back to the drawing board and creating a new thumbnail more in keeping with the iconography of how the dragon should look. "Usually you see dragons coming at you with their heads up, and sometimes they have wings. But they're always in that dragon-like pose, which, for example, you see on the prows of many Viking ships," he says.

His new thumbnail shows a dragon looming in mist. This concept not only satisfies dragon lore, but it makes the creature seem monstrous and threatening in relation to the human figures, and it makes the cliff seem high and precarious. Rush adds a few treetops in the scene to initiate the height of the cliff and to imply that the characters are in a forest.

Rush says the new thumbnail, which he completed in about 30 seconds, is the most important step in the entire process because it defines the essence of the finished piece. From there, it is a simple process to place the completed composition of the figures into the new context, determine the shapes of the cliff, trees and dragon, and finish the pencil illustration. (See Figure 6.)

In other words, the thumbnail blocks out the idea and everything else is simply development and refinement, he says.

## COLOR COMP

The color comprehensive, painted in gouache, is the artist's opportunity to explore the effects of light and shadow on the mood, texture and composition of the piece. Because he is creating a mood of tension, he uses complementary colors to set up a series of sharply defined contrasts. For example, he sets a purple dragon against a lemon yellow sky.

Rush also decides to simplify the composition by changing the shape of the snow. This helps draw the eye from the base of the snow line to the arch of the dragon's head and back, encircling the key elements in the composition. (See Figure 7.)

The artist also angles the cliff face downward, creating a triangular focal point with white space and providing the maximum contrast between depth and flatness. Changing the angle of the cliff also creates a very threatening setting for the characters.

In case you are wondering what the best dressed Vikings wear to fight a dragon, the style and color of their costumes also is finalized in the color comp. Rush takes his inspiration from his

Photos by Tony Keisman

5 The artist leaps ahead with a 4 x 6-inch black-and-white sketch, but he discovers a mistake. Instead of a beast of mythical proportions, the sketch shows a dragon the size of a small house, and the cliff only four-times the size of a man. "This is an example of how you screw up as an illustrator," says Rush.

6 The revised thumbnail, completed in about 30 seconds, is probably the single most important step in the painting, because it is the essence of the finished piece. From the thumbnail, he determined the size and shape of the cliff, trees and dragon, and placed the figures into the new composition. The new pencil sketch is about 4 x 6-inches.

7 In the gouache color comp, Rush explores the effect of light and shadow on the mood, texture and composition of the piece. Because he wants a feeling of tension, he uses complementary colors, like a purple dragon against a yellow sky. He also makes changes in the shape of the snow and cliff, and determines costume designs and color.

research on Viking fabrics. (Since cloth disintegrates there is very little visual reference from the era depicted in "Beowulf." While Rush knows the colors would not have been as bright because good dyes did not exist, he takes artistic license, knowing this is a storybook rather than a history book.) "The Vikings tended to use strong geometric patterns in their fabrics, not necessarily these designs, but I tried to make them plausible," he says.

Rush also uses lighting and color intensity to create a visual hierarchy that focuses attention on Beowulf and his lieutenant, Wiglef, who is standing on Beowulf's left.

"I wanted to put the strongest pattern and the most intense contrast on the king because he's the center of attention, and on Wiglef, because he is the only character who does not desert Beowulf in the battle with the dragon," Rush says.

## UNDERPAINTING

Rush has been working with gouache (he prefers Winsor & Newton) for approximately 15 years primarily because it dries fast. Because he works very thinly, he is not bothered by a buildup of color, which frustrates many artists who work with this medium. "If I am overpainting something, I do it in a way that I don't bury or kill what is underneath. You could almost call it glazing. I try to keep the painting as transparent as I can."

Rush sometimes uses acrylics, usually accompanied by gouache, but he tries to use polymer-based medium for its strengths (quick drying times and impermeability), rather than weaknesses (an inability to blend well).

The artist's normal procedure with gouache is to lay in a wash or two over his drawing so he is working from a middle ground, seal the wash with acrylic varnish, then finish the painting in gouache. *Tip: This process allows mistakes to be wiped away at any time.*

**TEXTURE WITH GESSO** Although he is working on Crescent 260 board with a fine linen finish, Rush says heavy contrasts in texture are crucial in creating a sense of impending danger. To create a surface similar to that of a heavily textured canvas, he applies several coats of acrylic gesso to the board. Before the second coat dries, he makes horizontal and vertical strokes with a dry brush (a house painter's brush works well). When the gesso dries, this texture remains. (See Figure 8.) *Tip: Another effective method for creating a textured surface is to mix a fine sand with the gesso, or to gesso a thin fabric to the board.*

The combination of the texture, thinly applied paint (that sits in the crevices of the texture) and color variations sometimes applied with an impressionist stroke give the illusion of oil paint. Explains Rush, "I have tried to paint this image in a way that suggests oil paint—not that I'm trying to copy oil painting. But I want these illustrations to look old."

**TRANSFERRING THE DRAWING** Working four-times larger than the actual printed reproduction, the artist tapes off his illustration area. Rush notes that the size of the working area is no accident. As an illustration is compressed, colors become more intense and lines become thinner. Rush has also found that working larger than four-times can present problems for reproduction.

Rush uses an opaque projector to position his final sketch onto the work area. He redraws the figures with a soft lead pencil. (See Figure 9.) When he is finished, he uses Krylon Spray Clear to seal the pencil markings. Rush notes that some illustrators also use hair spray, but this can become sticky.

When the pencil sketch is sealed, the artist covers the entire drawing with a thin coat of gesso for insurance. Otherwise, accidental smears can erase the pencil marks, he notes.

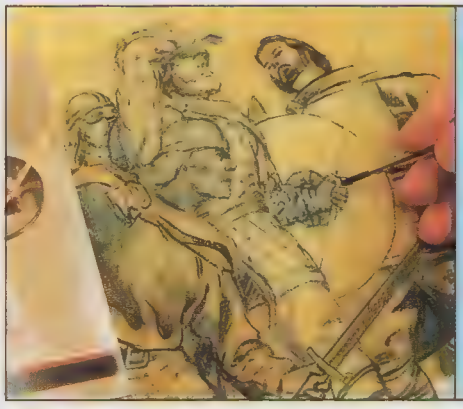
**8** To add texture to his Crescent 260 board, Rush applies two coats of acrylic gesso. Before the second coat dries, he makes horizontal and vertical strokes with a dry brush. When the board dries, the texture remains.

**9** Transferring his final sketch with an opaque projector, he redraws the figures with a 4B lead pencil. When finished, he uses Krylon Spray Clear to seal the pencil markings. Then he covers the drawing with a light coat of gesso for insurance.

**10** Using a broad house painter's brush, Rush adds a wash of raw umber over the drawing. With this technique, he is able to start with middle values and work toward darker and lighter values.

**11** The artist then lays in a cool indigo wash. Combining warm and cool colors emphasizes the board's physical irregularity and the irregular values and color of the underpainting. Thin layers of gouache gives the illusion of oil paint.

**12** Rush first applies gray values on the foreground figure using gouache sparingly mixed with water. Next, he roughs in the area covered by snow to give him some sense of the lightest tones. The snow will be one of the few opaque areas.



**13** Using a small brush, Rush outlines the figures with dark blue. He paints in some shadow areas using thin washes of the same color. He feels the outline is important because of the complexity of the figures.

**14** After first applying color to the background with a brush—blue-violet for the dragon and gray values for the sky—Rush uses a Thayer & Chandler airbrush Model A to blend the strokes together.

**15** Next, Rush uses a No. 5 flat brush to apply more white paint around the dragon's head. This sets up a contrast between rough and smooth textures. Later, he will use the airbrush to smooth out the rough areas.

# FOLLOWING HIS 'OBSESSION'

Simple as it may sound, today's illustrated children's novel begins with the determination to make an enormous commitment in time and effort–with the possibility of no financial return. It's a gut-level decision.

"There has to be something inside that drives you–despite your better instincts–to follow your obsession," says John Rush of his "Beowulf" project.

"Maybe it's just my mid-life crisis, but to this point, I've been concentrating mostly on single [images]. This project gives me an opportunity to tell a complete story in pictures. It's like Cecil B. De Mille by comparison," he says.

Rush, who is gaining a nationwide reputation for his remarkably detailed illustrative style, has come a long way from his boyhood in Muncie, Ind., where the artist's heroes were N.C. Wyeth and Howard Pyle, two illustrators who brought to life the fiction of early 20th century novelists, like Robert Louis Stevenson.

Despite growing up with a drawing pencil in one hand and sketch pad in the other, Rush chose a career in industrial design, graduating from the University of Cincinnati in 1971. He designed machines for a few years before deciding his real calling was art. So he went back to school, graduating in 1975 from The Art Center in Pasadena, Calif.

After college, Rush was invited to join the Jack O'Grady art studio in Chicago, and later moved to Hamlin Pedersen, a Michigan Avenue agency where he was one of 17 illustrators "creating junky advertising stuff," he says. "I once did a series of [illustrated] garden sprinklers," he adds.

But his work in a variety of art studios taught him valuable fundamentals of the illustration trade–working on deadline, placing cast shadows, working in one-, two-, three- and four-color, and a host of other practical techniques he still finds useful.

"The real advantage of [studio jobs] was working with veteran illustrators who could do this stuff easily and quickly without even thinking about it. That was a great learning experience," the artist says. "Unfortunately, those places really don't exist anymore. Almost all of this type of work is done freelance now," he adds.

In the late 1970s, Rush followed his dreams to New York City, but soon became disenchanted with the hectic life there. After two years, he and his wife, Danea, who is marketing director for the American Library Association, moved back to Chicago, eventually settling in Evanston, a nearby suburb.

Although experienced and successful, Rush still feels he is just beginning to understand the "art" of illustration. "At 41, I'm definitely an old man. But as far as developing as an illustrator, I'm definitely in the beginning stages," he says.

That's why he wants to challenge and extend himself by taking on the complex and difficult (self-imposed) assignment of illustrating "The Legend of Beowulf." Like Wyeth and Pyle before him, and the Renaissance Italian masters who painted Biblical frescoes on church ceilings, Rush wants to tell the greatest stories in pictures.

"This is the modern version of the old frescoes," he says. "That's the level I want to aspire to . . . and someday, I hope to achieve."

**Editorial Assignments** The gouache-over-modeling paste illustration (above) for the book jacket of the Harper-Collins book "Mirage," a story set in ancient Egypt, is based on a wall painting of that period. (A.D. Suzanne Moli.) The cover (below) for *Information Week*, a publication with covers technical developments in industry, was one of two ideas Rush presented to art director Hector Marrero. More complex than most of his work, it was painted with Rush's gouache technique and took more than two weeks to complete.

**16** At this stage, Rush has established the basic value contrasts in the painting. He has also set up three layers of texture, the gesso, brushwork and airbrush. The next step, shown here, is to add color on the figures. Here we see how Rush has applied the first layer of color on Beowulf's tunic.

**18** The artist adds brighter color to Beowulf's tunic and renders the pants in a light blue. This contrasts dramatically with the foreground figure, painted with dark blue-grays and violets. Rush's color is applied thinly, especially in the shadow areas, to create a transparent effect.

**17** Rush now focuses on the contrasting relationship in hue and value between Beowulf and other figures. Beowulf will be the lightest and most colorful. The foreground figure will be dark and cool while Wiglef (at Beowulf's left) will take the secondary position, through light, but subdued colors.

**19** Next, Rush applies less intense and cool colors—greens and violets—to paint Wiglef's garments. This sets up yet another contrast. He also applies color to the crouching figure, which the artist will eventually gray back so the figure will recede.

**WASHES** Rush also takes a cue from artists such as Norman Rockwell in using a broad brush to add a wash of raw umber over the entire piece. (See Figure 10.) This enables the artist to start with middle values and gradually work toward darker and lighter values.

Over the umber he lays in a cool wash with indigo. (See Figure 11.) "Running the warm and cool colors together emphasizes the physical irregularity of the board and the irregular values and color," says Rush. This kind of working surface can be seen in the background of the picture and helps the figures stand out.

Finally, Rush seals the entire piece with acrylic matte medium, making the underpainting entirely waterproof. *Tip: Sealing with the acrylic medium allows the artist to use a wet sponge to wipe away accidents or mistakes. In this way, any portion of the piece from the underpainting can be reworked.*

## PAINTING

Rush says every painting develops its own "rhythm of contrasts"—dark to light, cool to warm, hard edges to soft edges. To develop this rhythm, he begins working in the areas with the most extreme contrasts and gradually works to the areas of least contrast.

In this painting, the greatest contrast is between Beowulf and the man standing in the foreground. The artist applies gouache (sparingly mixed with water to reduce the possibility of smearing) with a Robert Simmons white sable No. 2 brush.

Next, he roughs in the area covered by snow to give him some sense of the lightest tones. This is one of the few opaque areas in the picture. (See Figure 12.)

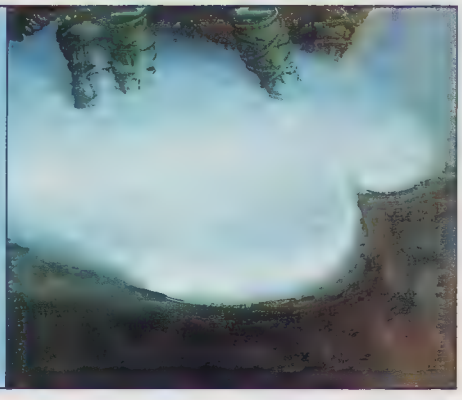
As he is painting the figures, the artist refers repeatedly to his photo references for accurate depictions of shadows. Using a small brush, he outlines the figures with dark blue then paints in some of the shadow areas using thin washes of the same color. (See Figure 13.) Here Rush feels it is important to outline the figures in paint because of their complexity. As he continues painting, he blends the outlines into successive color applications.

After some of the initial washes on the figure are complete, the artist paints in the fog-shrouded background using blue violet for the dragon, grayed white for the upper part of the sky and violet for the lower sky. Color is applied with both brush and airbrush. Rush uses a Thayer & Chandler Model A powered with a 20 lb. canister of carbon dioxide. "Compressors drive me out of my mind and this is a quiet way to work," notes the artist. (See Figure 14.)

The airbrush allows him to easily blend the choppy strokes created with a brush. The combination of brush and airbrush also results in a variety of interesting textures. "I don't want just an airbrush texture because it is monotonous. And I don't want my work to look airbrushed, so I use it as a blending tool to save time," he explains.

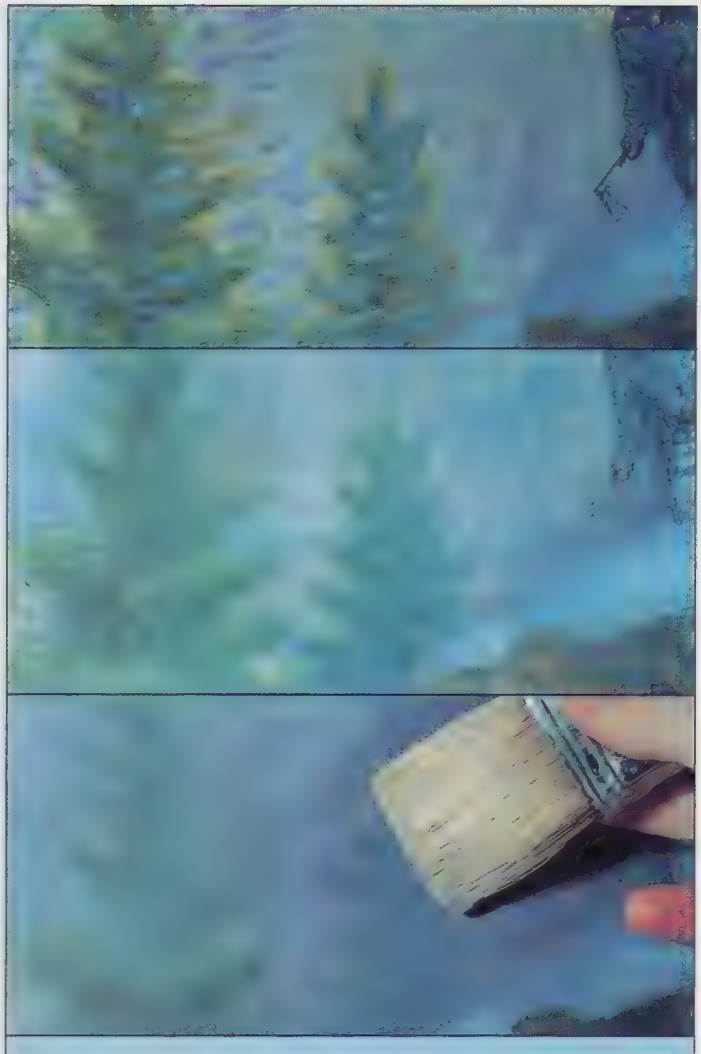
Next, Rush uses a No. 5 flat brush around the dragon's head to

**20** Rush exaggerates the hue and value contrasts between the foreground and background characters to visually increase the distance between them. Note the contrast between the background figure (left) and the shield.



**21** Contrasts in value are critical even in the snow mass, where Rush uses opaque paint and a gradation of light to dark to give the area structure. Note how the value changes are made with small impressionist-like strokes.

**22** Rush uses an airbrush to apply a layer of white over the background characters, simulating the softer focus and less intense hues of a fog-enshrouded background.



**23** This sequence shows the background trees before applying the airbrush (top), after an initial spray with the airbrush (center) and how they appear after Rush spreads the airbrushed pigment with a dry brush. The last step is to counter-effect the monotony of the airbrush spray.

set up a dramatic contrast between rough and smooth. This establishes an area of tension between the dragon and the human figures. (See Figure 15.) Once again he uses his airbrush to smooth out the texture, making the brush strokes more subtle.

The piece now has two rough texture layers—gesso overlaid with consecutive layers of brush patterns—and a smooth layer of airbrush, giving the work three distinct textures. (See Figure 16.)

"I want to set up a contrast between brush strokes and overall smooth gradation," Rush says. "You always want to get the maximum number of contrasts in texture, either rough texture against a smooth texture, or two textures on top of one another."

**COLOR CONTRASTS** The artist now focuses on the contrasting relationship in hue and value between Beowulf and the man in the foreground. Note he is creating contrasts from cool to warm and dark to light. (See Figure 17.) "Beowulf looks more warm and radiant because he's up against the darker [cooler] character," Rush says of his color choices for these figures.

To create this contrast, the artist invents a bold pattern for Beowulf's tunic and paints it red and white. So the Beowulf figure will stand out, he chooses blue-grays and violets for the dark figure in the foreground. (See Figure 18.)

Next, the artist works on Wiglef. Although Wiglef is a main character, Rush uses less intense and cooler colors—greens, violets and eventually ochres—to paint Wiglef's garments. This sets up an immediate contrast between the two main characters, allowing Beowulf to be the focus of interest. (See Figure 19.)

The background figures provide many contrasts with those in the foreground, setting up a hierarchy of importance for each character. For example, the foreground characters are sharper and their colors are more intense, while background characters

are softer in focus and value. Rush exaggerates the contrasts in hue and value between the foreground and background characters to visually increase the distance between the human figures in a composition that is "basically very flat," he says. (See Figure 20.)

Rush views contrasts between light and dark, sharp and soft focus, as well as hue and value as golden opportunities to add depth to the painting. "Everywhere you can find an opportunity for contrast, you try to exploit it. My heroes are the great masters, who were wizards at contrast . . . right down to the interplay of light and shadow between a finger and a knuckle," he adds.

Contrasts in value are critical even in the snow mass, where the artist uses shading to add height and shape. Note the hard edge of snow in the foreground, which contrasts with the rocky cliff edge and the soft edges of snow on the boots of the men. (See Figure 21.)

As a finishing touch, Rush uses an airbrush to apply a layer of white over the background characters, simulating the softer focus and less intense hues of a fog enshrouded scene. (See Figures 22 and 23.)

## TRANSPARENCIES

Upon finishing the painting, Rush takes his work to Ross-Ehlert Photo Labs, Chicago, to have a 4 x 5 repro transparency made. When the film arrives, the artist sees a problem: When the painting is reduced in size, it becomes darker and some background colors become too intense. The dragon, in particular, is too dark.

Rush decides to compensate by airbrushing a layer of white gouache over the dragon, then diffuses the area around the dragon with yellow and a bit more blue. He especially wants a contrast between the head, which is closer to the viewer and more defined, and the body, which is farther away and less defined. The artist uses the same techniques to soften the figures slightly and to diffuse the background, creating a foggier effect. (See Figure 24.)

"You're always trying to anticipate how the painting is going to be changed in reproduction," the artist says. He adds that there is no way to accurately predict how the printing process will affect the work.

"I've had some terrible things done to my work—everything from diminishing the blacks to totally changing certain values. But these are the times in which we live," he adds philosophically. "That's why it's important to look for vendors and clients who know what they're doing and really care about quality. Ultimately, they'll give you a nice product," he says.

Rush offers one tip on color decisions: Don't try for too much subtlety because it's easier to reproduce a simple palette of colors and contrasting values. "It's important to remember that the finished product is not the painting. It's the printed page," he says.

## PLANNING THE BOOK

With the first illustration complete, Rush begins planning the layout and cover so he will have a package to send potential publishers. For the cover he sketches an 8⅜ x 10⅛-inch pencil drawing that features Beowulf in a heroic stance.

In addition to the type and decorative ornaments on the cover sketch, Rush also creates an illustrated drop cap, painted in gouache, that he will use on the page layout. He works with several designs for the illustrated letter, first imitating Celtic designs, then the long stick-like figures of Runic alphabets. He finally settles for a more horizontal style, reminiscent of Vatican type. But the design is his own creation, a simplified version of the Vatican type. The border stripe is adapted from Viking designs. "I try to invent as little as possible. Anything I come up with would be fake looking compared to the real thing," he says. (Refer to opening visuals.)

24 After having this 4 x 5 transparency made, Rush notices that when the painting is reduced, it is darker (especially the dragon) and the background colors are too intense. To compensate, he lightens the background to give it a softer, more diffuse look.

To create the page layout, Rush asks a designer friend to lay out the page on a Macintosh using Bookman type because the face has a horizontal appearance. He then pastes his art on the printout of the page, takes the art and cream-colored text paper to a local photocopy center and has copies made on a Kodak black and white copier. "I think it gives the best halftones of any photocopier I have ever used," he notes. On the four copies (one for each of the publishers Rush wished to contact), the artist then paints the drop cap in red, and touches up the decorative border with values of gray. He then pastes C-prints of the art onto the opposite page.

As of this writing, Rush is waiting hopefully for responses from the publishers. While several have expressed interest, none has offered a contract as yet. If these initial responses are negative, he plans to seek other outlets. Like his subject Beowulf, he will persist until he is victorious. ■

*Richard Edel is a Chicago-based freelance writer and a regular contributor to* Advertising Age *magazine.*

# Copperplate: Engraving For the Masses

*Created to mimic the elegance of expensive print processes, engravers faces have found a home in contemporary design work.*

**By Allan Haley**

One of today's most popular types was designed by Fred Goudy.

On the surface, this may not appear to be a terribly momentous statement. After all, Goudy was one of America's most important and prolific typeface designers. But the typeface in question isn't Goudy Old Style; neither is it Kennerley, or Deepdene, or ITC Goudy Sans®, or even Goudy Village.

The face? It's Copperplate Gothic. While most designers who stay current with graphic trends are probably aware of the typeface—or at least the design—probably few are aware that it was designed by the same good-natured egotist. This face was one of Goudy's many commissioned designs. As were many successful type designs, Copperplate was also created to satisfy a particular market need.

## STEAK APPETITE, BURGER BUDGET

Steel and copper plate engraving was, around the turn of the century, the most sophisticated and expensive method for producing business cards, stationery and formal announcements. The idea behind printing with handset or machine-set metal type is that ink is applied to the face of a raised piece of metal and transferred to the printing surface. In engraved printing, the image is incised (or engraved) in a hard, flat plate. Ink is applied to the plate, but is then wiped off, leaving only the ink which is trapped below the surface in the incised areas. When paper is pressed against the flat plate, the ink is drawn out of these areas and transferred to the paper. The results are two-fold: printing which sits above the surface of the paper, and the ability to reproduce very delicate lines and shapes.

For business and formal printing, engraved printing was, and is, considered the best. The problem is that not everybody can afford the best.

Enter the marketers. They figured that if they could produce a typeface for traditional printing which would have the appearance of engraving, they would be able to satisfy the needs of the many people who had to live within modest printing budgets. And so engravers faces were born. Goudy's wasn't the first, but his was far and away the most popular.

## ATTRIBUTES

Copperplate Gothic's name succinctly describes its design characteristics. It is a gothic (sans serif) face, with tiny, yet distinctive serifs typical of lettering engraved in copper or steel plates.

To begin with, this is an all-cap design. Although later variants on the theme do have a companion lowercase, the original Goudy design was limited to uppercase letters. The main reason the lowercase letters were eliminated from the design brief was that they would have been too small to reproduce well at the very small sizes in which the typeface was intended to be used.

**NOT YOUR BASIC SANS SERIF** In its basic form, Copperplate is somewhat expanded (again for the purpose of legibility at small sizes), and in its smaller sizes, its appearance is nearly monotone in weight. It is when Copperplate is enlarged, however, that its 19th century ancestry becomes apparent. The stroke weight isn't exactly, or even optically for that matter, monotone. In many versions, some of the curves look a little uneven and a bit light. The "Z" looks somewhat top heavy, and the "G" and "J" have downright awkward shapes. Clearly this is not your basic consistent, carefully modulated, and somewhat sterile, modern sans.

Copperplate has a humanity not found in later more "perfect" sans serif type styles. An interesting aspect of the design is that this feeling of humanity does not come from calligraphic character shapes or stroke stress—there isn't a hint of the calligrapher's

**Contemporary Application** Copperplate is used in this collection of posters, designed by Muller + Company for the grand re-opening of a shopping center. (Design and art direction: John Muller and Kent Mulkey.)

DON'T GET EMOTIONAL. WE'LL BE OPEN SOMETIME IN THE NEAR FUTURE.

YOU'RE A REAL KNUCKLEHEAD. WATCH FOR OUR GRAND OPENING.

COMMISSIONED TO CREATE A PACKAGE FOR A TYPE CATALOG FOR LOS ANGELES-BASED ANDRESEN TYPOGRAPHICS, HE CAME UP WITH A BINDER DESIGN THAT SPELLS OUT THE COMPANY'S NAME ON THE COVER IN HIS OWN VERY PERSONAL INTERPRETATION OF ANCIENT HIEROGLYPHICS. INSIDE, FOX CONTRIBUTED A GLIB WRITTEN ACCOUNT OF THE DERIVATION OF EACH LETTERFORM. "A LOT OF PEOPLE TOLD ME THEY LIKED THE DESIGN BUT THEY DIDN'T GET THE IDEA," HE SAYS. "THEY WOULD HAVE UNDERSTOOD IT IF THEY'D READ MY COPY. I GUESS TYPE CATALOGS AREN'T HIGH ON PEOPLE'S READING LISTS"

FOX'S FLAIR FOR WORDPLAY SHOWS IN HIS LATEST BROCHURE FOR ANDRESEN. ILLUSTRATIONS LIFTED FROM AN OLD BOY SCOUT MANUAL ARE ENLIVENED WITH THE DESIGNER'S OBSERVATIONS ON WORKING WITH CLIENTS AND SUPPLIERS, PLUS TIPS LIKE "COMMUNICATING WITH THE OPPOSITE SEX." "MEN—FEEL SILLY TALKING TO WOMEN?" FOX WRITES. "WOMEN—FEEL LIKE SLAPPING THOSE MEN SILLY? LET ANDRESEN SHOW YOU HOW!"

TEXT AND TYPE PLAY SUCH A LARGE ROLE IN FOX'S WORK THAT IT'S NOT SURPRISING HE'S RECENTLY MADE HIS DEBUT AS A TYPE DESIGNER HIMSELF. PROPAGANDA, HIS FIRST REGISTERED FONT AND AN ANDRESEN EXCLUSIVE, POINTEDLY DEMONSTRATES THE DESIGNER'S CHARACTERISTICALLY CAGEY APPROACH TO HIS MATERIAL. FOX SAYS HE SEES THE NAME AS "...A POLITICAL STATEMENT. AFTER ALL, EVERYTHING IN OUR BUSINESS IS ABOUT TRYING TO MANIPULATE SOMEONE TO BUY A PRODUCT OR A SERVICE, ISN'T IT?..." THE INDOCTRINATION SEEMS TO BE WORKING FOX'S MAIDEN TYPEFACE HAS ALREADY TURNED UP ON A CAPITOL RECORDS ALBUM COVER

WORD AND IMAGE FUSE TO DRAMATIC EFFECT IN THE RIB-TICKLING LOGO FOX CONCOCTED FOR A HIP NEW EATERY ON SAN FRANCISCO'S EMBARCADERO. "IT'S THE ONLY JOB I EVER GOT BY LEAVING MY BUSINESS CARD," HE REMEMBERS. EMBLAZONED WITH BLACKDOG'S MASCOT (GINGERLY TREADING OVER BURNING COALS) FOX'S CALLING CARD GRABBED THE ATTENTION OF JOE AND MARNI LEIS, A COUPLE OF DOG LOVERS WHO HAPPENED TO BE LOOKING FOR A GRAPHIC IDENTITY FOR THEIR LATEST DINING VENTURE.

THE RESTAURANT NEEDED A NAME, TOO. FOX SUGGESTED "EMBARKO," WITTILY INCORPORATING A REBUS FOR THE MIDDLE SYLLABLE THAT NEATLY ILLUSTRATES HIS ESTHETIC. "MY GOAL IS TO EDUCATE OR AMUSE PEOPLE, OR BOTH," HE SAYS. FOX'S OWN LOGO HAS CHANGED. "THE OLD ONE SEEMED TOO FRIENDLY I THINK THIS ONE LOOKS MORE LIKE A WEASEL YOU MIGHT SAY THAT'S THE NEW ME FOR THE '90S."

Ken Coupland is a freelance writer living in Oakland, California.

6. The original BlackDog Graphics symbol.
7. Fox's BlackDog as reinterpreted by illustrator Gary Baseman.
8. Embarko's rebus.
9. Latest symbol for BlackDog Graphics

10. A collage painting Fox designed for the 1991 Simpson Paper calendar. Art director was Steve Tolleson.
11. Book jacket design for a new novel from Mercury House, Inc.

12. Seat designed for Bianchi bicycles. Art direction by Zimmermann Crowe Design.
13. Bianchi's catalog.
14. Symbol & logo for musician Dave Kot
15. Embarko coaster.

**Use in Text** This page, from *U&lc*, employs Copperplate to good advantage. The straightforward column of type complements the sparseness of the graphics at right. (Courtesy International Typeface Corp.)

pen or broad brush character strokes in Copperplate. The design's personality is perhaps just a little more naïve or a bit less sophisticated than the likes of Univers®, or ITC Avant Garde Gothic®. As a result, Copperplate Gothic has an almost primitive, less-than-perfect aesthetic quality.

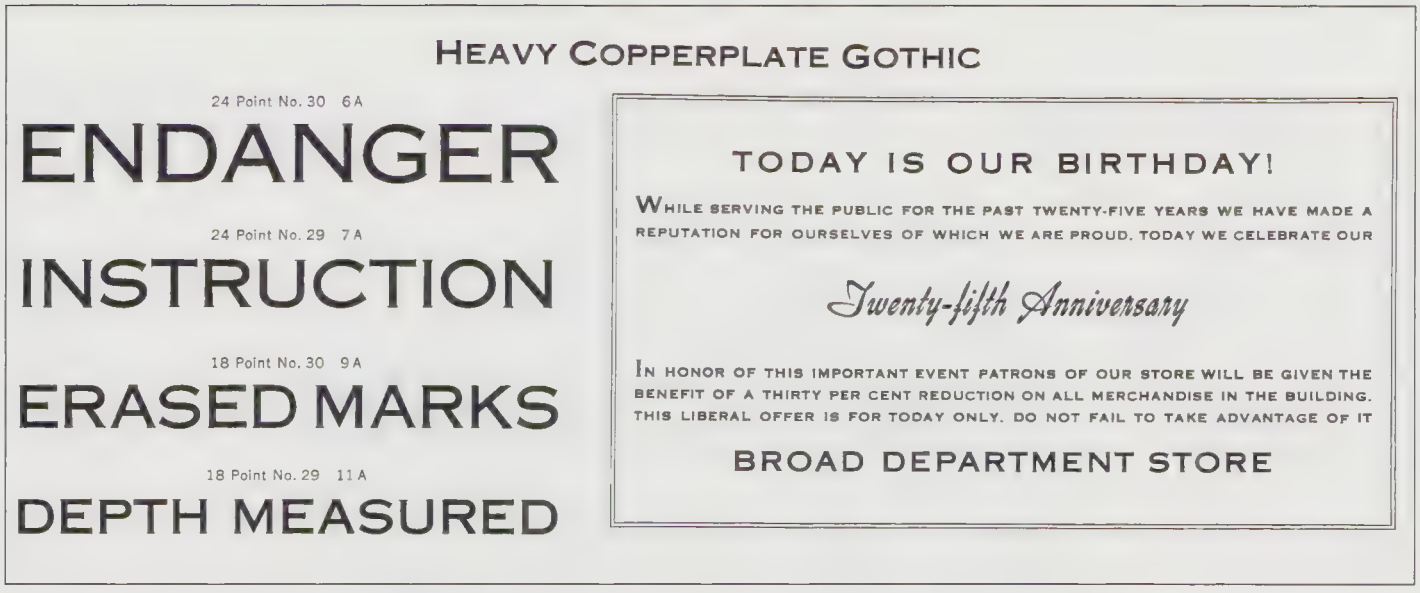
As far as specifics are concerned, character stroke ends are cut, in the 19th century tradition, at 90 degree angles. Very small slab serifs (perhaps in this case they should be called "sliver serifs") terminate most strokes, and character weights are virtually monotone. Only the "Q" and British pound sign vary from this apparent lack of weight stress. The tail of the "Q" tapers as it enters the counter, and the "£" has a swash-like quality to its base, which makes it almost appear to be a "wrong font."

## BACKGROUND

Printers rarely get rich at their craft. Small printing companies, practically since Gutenberg's time, have struggled to make ends meet. They continually look for new customers and new forms of business to stabilize their cash flow problems. At the turn of the century, copper or steel plate engraving was a popular, but expensive, way of producing what was called "commercial and social printing." Small neighborhood printers would have loved to sell this kind of printing, but most just didn't have the revenues to justify the equipment and the trained staff to offer this service to their customers.

American Type Founders and other major type suppliers of the period rightly judged that if they could supply handset metal type that looked like engraved printing, they could sell a font or two to just about every small printer in America. Most of the type they produced looked like Goudy's Copperplate Gothic. They went by names like Steelplate Gothic, Boxhead Gothic, Lining Plate Gothic and Plate Gothic. When these became some of the foundry's most successful fonts, they released other variations on the theme. German gothics (Old English to most of us) were offered under the name of "Wedding Text," moderns were provided with names like "Engravers Roman" and "Card Bodoni," and fancy faces were offered under names like "Invitation Shaded" or "Stationers Script." (Names such as these announced their intended use with all the subtlety of a hammer.) Type suppliers' specimen books even provided many pages of examples of how to use these faces correctly.

**CLEVER TRICKS** Because it was intended for very specific applications, the original Copperplate came in a limited, but ingenious, range of point sizes. It was available in only two point sizes: 6 and 12 point. To provide printers with a full range of cap and small cap capabilities, however, fonts of type were manufactured with eight sizes of letters cast on 6 point and 12 point bodies: four on a 6 point body and four on a 12 point body. Copperplate 6 Point No. 1 was the smallest, and roughly equivalent to 4 point type, while Copperplate 12 Point No. 8 was the largest at almost the size of, say, 14 point Helvetica. An additional benefit to this sizing system was that since the four sizes of type on the 12 point body were cast on slugs exactly twice the size of those on a 6 point body, the printer had a relatively


HEAVY COPPERPLATE GOTHIC
24 Point No. 30 6A
ENDANGER
24 Point No. 29 7A
INSTRUCTION
18 Point No. 30 9A
ERASED MARKS
18 Point No. 29 11A
DEPTH MEASURED
TODAY IS OUR BIRTHDAY!
WHILE SERVING THE PUBLIC FOR THE PAST TWENTY-FIVE YEARS WE HAVE MADE A REPUTATION FOR OURSELVES OF WHICH WE ARE PROUD. TODAY WE CELEBRATE OUR
Twenty-fifth Anniversary
IN HONOR OF THIS IMPORTANT EVENT PATRONS OF OUR STORE WILL BE GIVEN THE BENEFIT OF A THIRTY PER CENT REDUCTION ON ALL MERCHANDISE IN THE BUILDING. THIS LIBERAL OFFER IS FOR TODAY ONLY. DO NOT FAIL TO TAKE ADVANTAGE OF IT
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simple modular system of fonts with which to work. The result of this planning was eight sizes of type that could be mixed with comparative ease, making what would normally have been a complicated "lock-up" in metal type quite simple.

The idea for Copperplate Gothic came from Clarence Marder of the Marder Luce Type Foundry. It was he who commissioned Goudy to do the original work and who eventually took on the task of creating additional weights and proportions to complement the basic design.

**THE MARKETERS WERE RIGHT** Copperplate was an instant success. Not because it was beautiful, but because it answered a very real marketing need. It became axiomatic among type salespeople that, "If you couldn't sell Copperplate, you had no business in sales." When American Type Founders took over Marder Luce, Copperplate became ATF's most popular face, which probably made it Fred Goudy's most popular typeface design.

Other foundries also released cloned versions of ATF's Copperplate. Steelplate Gothic was released by Barnhart Brothers & Spindler; Lining Plate Gothic was Ludlow's version; Spartan was made available from Monotype; Plate Gothic was released by Weber; and even the Italian foundry of Nebiolo made a version which it called Atalante.

Like most families of metal type, the Copperplate family grew in size as it increased in popularity, new variations and proportions being added in an attempt to cash in on the success of previous versions. Goudy designed what he thought was the normal weight, but when ATF released what they called "Light" and "Bold" versions of the design, Goudy's original became Copperplate Heavy. Several condensed designs were also created as were extended proportions and even an "outline" with the insides of the strokes shaded.

## CONSIDERATIONS FOR USE

Copperplate and other engravers faces like it are dual-edged swords: They have a sense of charm and can be a refreshing change from the more traditional (read, boring) sans serif designs, but they also limit themselves to caps-only usage—roughly the typographic equivalent of communicating through two tin cans and a string—clearly not the most efficient method to get the message across.

How do you use this face well? Once over the typographic hurdle of having to deal with caps-only copy, the first step is to keep word count to a minimum. Caps are just plain harder to read than lowercase letters, so the fewer words the better. Also, keep line lengths on the short side. In text copy, ideal line lengths run about nine to 12 words per line, in display heads the correct number is about half that. As for Copperplate, keep lines to three or four words when using it in display applications.

Finally, give the type room to breathe—or more accurately, help the eyes with enough white space around the words to allow them to focus on one at a time without distraction. Line space values should also be kept open; it not only looks good, it also helps to compensate for the lack of readability in all-caps copy. *Tip: If you like the Copperplate look, but want to try a different kind of type, try Icone® or ITC Newtext®. Both have a Copperplate "feel" and have the benefit of a lowercase should you want it.*

**EASY ACCESS** There should be no trouble finding sources for Copperplate. As far as type suppliers are concerned, it is almost as ubiquitous as Helvetica®. It is a rare typehouse or service bureau that does not have a font or two of Copperplate laying around somewhere. And just about every vendor of fonts offers at least a small selection of the Copperplate design. It's available as proprietary fonts for traditional graphic arts typesetting equipment, and as PostScript, or PostScript compatible fonts, for designers working with PCs.

Fred Goudy once wrote that the drawings for Copperplate were some of his best, but he probably had no idea that this simple design would also be one of his most popular and most enduring. ■

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*A regular contributor to* Step-By-Step Graphics, *Allan Haley is the author of the new Step-By-Step Publishing book, "ABCs of Type," and is contributing editor to* U&lc, *the International Journal of Typography published by International Typeface Corporation, for which he serves as executive vice president.*

Type samples courtesy of International Typeface Corp.

# Getting Paid: How Organizations Work

*Whether you work with large or small clients, here's how to get paid faster and with less effort on your part.*

By Cameron S. Foote

If your business is to grow and prosper, you not only have to get paid promptly, but you also cannot afford to waste a lot of time collecting. So it is important that you understand how organizations pay their bills. Knowing standard payment procedures and what can go wrong helps you avoid making mistakes, and also allows you to deal more constructively with payment problems that do arise.

## COMMON PROCEDURES

Here is a broad generalization: The larger the organization or client, the better the pay—and the more things that can go wrong before you get paid.

For every significant payment, usually several hundred dollars or more, most organizations require a purchase order (PO). It authorizes payment for up to a specified amount against a specific budget account. It also provides the vendor with delivery and payment terms.

In larger organizations, POs are usually written by the purchasing department upon the written request of a company executive (your client) supported by written documentation (estimate or proposal) from a vendor (you). If there is no documentation, there may be no request and, probably, no purchase order or payment.

After approval, usually by a senior executive, the purchase order is entered into the organization's computer system and the vendor sent a copy. The time required for this procedure normally takes from one to two weeks.

Any invoice submitted usually goes through these steps before payment: First, it must be approved by the person who initiated the PO. Then it must be sent to purchasing to "log" against the PO. And, finally, Purchasing must forward it to the organization's Accounts Payable Department for check clearance and issuance.

From invoice approval to check clearance, it usually takes two weeks or so. Actual issuance of the check is somewhat later, depending upon the PO payment terms and the dates the company actually issues checks. For example, if the payment terms are "Net30" (payment 30 days after invoice receipt) and checks are issued to all vendors on Wednesdays, a check would actually be issued on the next Wednesday more than 30 days after the invoice had been received.

## WHERE'S MY CHECK?

Here are some common "no-pay" scenarios.

**PROBLEM** No purchase order exists. When there is no prior purchase order authorizing work, an approved invoice will probably trigger one. However, payment will likely be delayed for several additional weeks because the PO will have to be routed for approval and entered into the system first.

**SOLUTION** Ask to have a purchase order issued when you get approval of your job estimate.

**PROBLEM** Your invoice was for more than the purchase order. Most large organizations can only pay up to 10 percent over the amount specified on the purchase order. Anything more and the invoice will kick out of the system, sometimes into a "limbo file."

**SOLUTION** Always inform your client early if there will be a discrepancy between your bill and the purchase order. Ask if a new or revised PO would be appropriate.

**PROBLEM** Your invoice wasn't approved. Your client must sign the invoice and send it on for payment. Sometimes invoices get misplaced, or clients forget to attend to them, or they have a question and just haven't gotten around to calling about it.

Illustration by Robert Zimmerman

**SOLUTION** It is a good idea to follow up every invoice submission with a telephone call a week later. Say you are calling to make sure that everything turned out OK, and see if there are questions about the invoice.

## HOW TO JOG A LARGE CLIENT

Whenever an invoice is more than 15 days overdue, call your client to see what the difficulty is. If he or she doesn't know—that is, your invoice was quickly signed and sent on—ask if the client's secretary can check into the problem.

Alternatively, ask if he or she would prefer for you to do so. If so, obtain the name and telephone number of appropriate personnel in the Purchasing Department.

When calling Purchasing, be sure to have your purchase order number, invoice date and amount ready. Purchasing should be able to tell you immediately if payment has been authorized, and if not, why.

If Purchasing has authorized payment, ask for the name and number of a person to talk to in Accounts Payable. Call and ask on what date your check will be issued.

When talking to Purchasing or Accounts Payable personnel, be friendly but aggressive. You are trying to help them uncover the cause of a problem. When the problem is uncovered, insist that your check be issued immediately, if necessary outside the normal accounts payable system.

## HOW SMALL CLIENTS DIFFER

Organizations employing fewer than 10 people—small agencies, design shops, PR firms, and so on—usually pay bills differently than their larger counterparts.

The good news about small organizations is you do not have to deal with the purchasing/accounts payable bureaucracies that so often slow down payments within large organizations. The bad news is that you do not have the protection of the procedures and professionalism that is also part of large organizations' systems.

In small organizations, only one or two principals usually have the authority to sign checks. Although this makes tracking payment problems easier, it also makes you more vulnerable to personal whims, and lack of efficiency or honesty.

Small organizations are also much more likely to work close to the financial edge. Cash flow is often a problem. And if cash starts to get tight, you can bet your invoices will take a very low priority compared to those for rent or utilities.

## HOW TO JOG A SMALL CLIENT

Another difference between large and small organizations is that the latter often does not have formal accounts payable systems. So signing checks is put off until one of the principals gets around to it. With such an agreement, it is the "squeaky wheel" that usually gets greased.

Keep following up. A week after submitting an invoice, follow up with a telephone call. Say you are calling to make sure that everything turned out okay, and to see if there are any questions about the invoice you submitted.

Whenever an invoice is more than 15 days overdue, follow up with a telephone call to determine what the problem is. Do not worry about possibly offending the client. No good one should be offended by a friendly, legitimate inquiry.

Once the problem is determined, ask to have a check issued immediately. Follow up again if you do not get it when promised.

If you cannot get through to the right person, try calling before or after normal office hours—early in the morning or evening. There will usually be no secretary around then to deflect calls.

Use a different tactic. If you still cannot get through and your phone calls are never returned, ask the person who answers the phone for the name of the organization's bookkeeper and how you can reach him or her. Just asking is further evidence of your seriousness and professionalism.

Discuss the situation with the bookkeeper, send him or her copies of the invoice(s) and ask for help in resolving the matter of immediate payment.

## AN OUNCE OF PREVENTION

Here are some simple safeguards that will make collection easier.

- Ask for money up front. Although it is always a good procedure, getting some money in advance and progress payments during a job is particularly important when working for small organizations. Chances of potential problems always diminish in direct relationship to the amount of money the client has already invested.

  Standard industry terms are: one-third of an estimate upon commencing a job, one-third upon first creative submission, and one-third plus any expenses upon completion. Make these guidelines your standard terms as well.
- Offer payment incentives. To encourage speedy payment of invoices, you may also wish to offer a discount. For example, two percent off invoice if paid within 10 days; otherwise the full (net) amount payable within 30 days. Although discounts are costly unless you "pad" your estimate to compensate for them, they can be quite effective in getting small organizations to pay early. Discounts are less likely to work with a large organization. (Note: Be cautious. Some organizations will take the discount and still not pay on time.)
- You may also wish to indicate on your estimate that interest (usually 1.5 percent monthly) may be charged on any unpaid invoice that is more than 30 days past due. Although trying to collect interest on past due accounts will seriously offend most clients, it is helpful to signal up front that you are serious about getting paid on time. And when calling about past due accounts, it gives you additional leverage.

If none of the suggestions offered here works, chances are good that you are dealing with more than simple neglect. The next call should probably be to your lawyer. ■

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*Boston-based freelance Cam Foote is editor of* Creative Business, *the How-to-Succeed Newsletter for the Freelance and Small Studio. He also gives the popular nationwide seminars "How to Price Your Services," "How To Make It As A Freelance," and "How To Sell Creative Services."*

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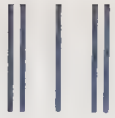

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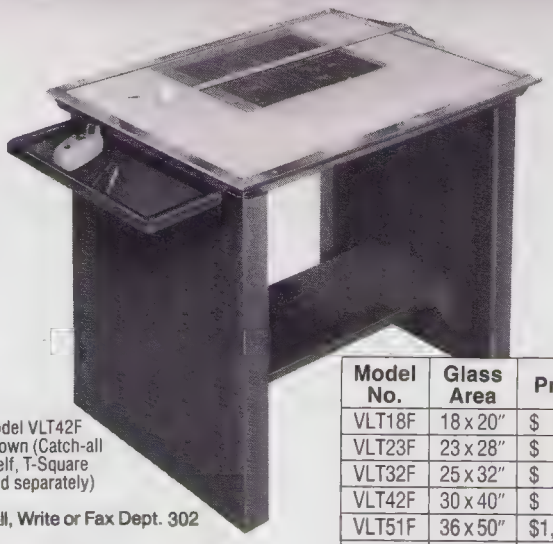

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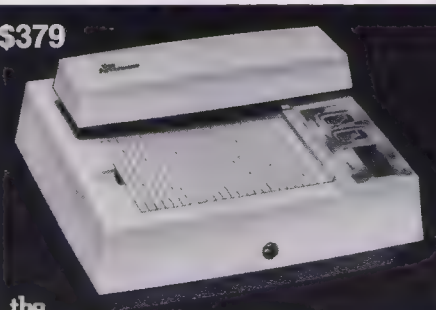

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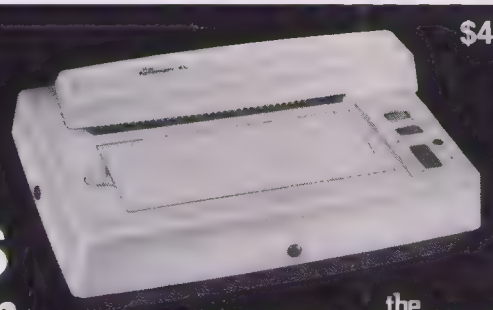

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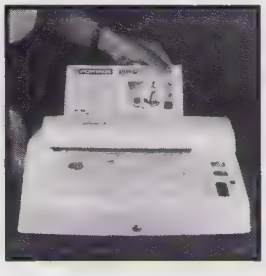

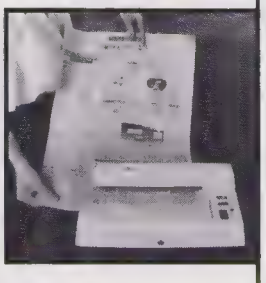

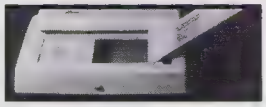

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Circle 22 on Information Card

# Earl Horter: Pioneer of Modernism

*Learn how this gifted artist used the principles of design he learned from modern painting in the illustrations he created during the '20s and '30s.*

**By Albert Gold**

As a graphic artist and illustrator, Earl Horter (1883-1940) was a step ahead of his time. An innovative watercolorist, skilled oil painter, draftsman and printmaker, he applied the lessons modern painters were teaching long before his contemporaries in the graphic arts. While some were still arguing over the legitimacy of impressionism, Horter was incorporating cubism and other modern art forms into the illustrations he created for such conservative clients as automobile manufacturers.

Born in Philadelphia of a temperate Germantown family, Horter had little formal art education. In his early teens, he worked as a copper plate engraver for a stock certificate firm. Later he was involved with a variety of freelance illustration work that eventually led to a job with N.W. Ayer, then the foremost advertising agency in Philadelphia. First employed as a "sketch artist" to render preliminary work, it wasn't long before he became an art director and frequently did the finishes himself. He developed a reputation for his ability to work convincingly in a great variety of styles, concepts and media.

The New York Art Directors' Club Annuals of the 1920s and '30s show many examples of Horter's work for various firms such as United Fruit, which sent him to South America to do a series of illustrations, and the drawing pencil manufacturer, Dixon Crucible Co., whose owners commissioned him to sketch in Europe and then used the drawings in its advertisements. He also worked for *The Saturday Evening Post* and did innovative watercolor illustrations for General Motors and LaSalle

ads which were noted for their avant-garde look.

## USE OF MEDIA

Until the mid- to late-1920s, Horter's work, especially in graphic media such as etching and aquatint, was in the traditional modes, exemplified by artists such as Whistler and Muirhead Bone. However, as the work of Picasso, Matisse, Bonnard and their contemporaries became more and more familiar on this side of the Atlantic, Horter became enamored with the new inventiveness. He frequented the New York galleries and began to collect French and American modern paintings. He also came to know such artists as Demuth, Sheeler, Marin and others.

He was one of the first to use these influences in his commercial work, as evidenced by his automobile ads. In these drawings, he emphasized the importance of negative space, of "leaving things out." He referred to this design principle as "respect for untouched areas." He felt that crowding every inch of the picture plane led to boredom and confusion.

**WATERCOLOR** Horter's handling of watercolor in his advertising illustrations was directly influenced by his awareness of how the medium was used in modern art. The watercolors of Jules Pascin, Raoul Dufy, Juan Gris, Paul Signac, Henri Manguin and Albert Marquet are but a few of the artists whose work and technique he studied. However, it was the work of Charles Demuth and his technical approach to watercolor that had the most impact upon Horter.

In addition to adapting some of the design principles of frac-

**The Modern Influence** These automobile ads from the mid-1920s reveal Horter's keen interest in adapting design principles he learned from modern painting into illustration. He was one of the first to use these influences in his commercial work. In paintings and drawings like this, Horter emphasized the importance of negative space, of "leaving things out." He felt that crowding every inch of the picture plane led to boredom and confusion. Especially noteworthy in these ads is the contrast of the highly abstract backgrounds with the detailed rendering of the cars. Some of the white space was created by using liquid frisket on areas he wanted to remain white, then painting in the forms.

**Graphite** In Horter's series of pencil drawings sketched in Europe during the mid 1920s for the Dixon Crucible Co., manufacturers of Eldorado pencils, one can see the artist's interest in architecture and architectural detail. It appears that Horter began his drawings with light line, then sketched in the shading through a series of linear strokes. Note in the drawing of the cathedral how the detail of the spire contrasts with the barely rendered foreground. In all of the drawings, Horter works with patterns of light and dark.

turing space into an integrated composition, Horter learned from Demuth techniques such as using salt to obtain textural effects. By sprinkling salt onto wet areas of the watercolor paper, he could get dappled, pointillist-like textural effects that cannot be obtained in any other way. When the paper was dry, he just brushed the remaining salt away.

Like Demuth, Horter's was a studied approach; some of his advanced illustrations consist of carefully placed washes of varying tonalities held together in an arresting composition. Since traditional watercolor methods made this difficult at times, Horter used the "stopping-out method." This entailed painting liquid frisket over areas he wished to remain white. After painting as usual and allowing the picture to dry, he would then rub off the frisket to reveal the white paper. Horter found this more effective than using opaque white because he could achieve a luminosity which unified the work and is impossible to attain when working with opaque paint. *Tip: With liquid frisket materials, however, it is advisable to first soap the hairs of your brush. This protects the frisket from damaging them. Needless to say, when using a liquid frisket, it is better to use less expensive synthetic hair brushes rather than good sables.*

From a study of Horter's watercolors, it appears that at times he blended colors together by first wetting areas of the paper then dropping charged color onto those areas. This way, he could place a cool color on one end and a warm color on the other and allow a spontaneous blending to occur. This results in fresher color and a more transparent effect.

Horter also mixed other media such as conté crayon or pastel with watercolor. While all of these techniques may seem commonplace today, it must be

**Preliminary Study** Using a combination of line and tone, Horter drew this 13½ x 22-inch preliminary study of the harbor in Rockport, Mass., with black conté and pastel.

**Pen and Ink** Early in his career, Horter was primarily a black-and-white artist and pen and ink was one of his primary tools. At times, he would do a study in graphite, then make a finished drawing with pen and ink. In this ad for a Boston bank, Horter combines detailed line work with fluid washes.

"HERE COME THE HOYTS"
THERE is something about a Pierce-Arrow that brings a friendly wave of the hand from traffic-officers... Even truckmen pull over a little more quickly, and doormen salute a little more smartly.
This instinctive deference is not due to the distinctive appearance of the car . . . nor its extraordinary comfort . . . nor the unparalleled control of its full-power brakes . . . nor even the quiet smoothness of its engine, so superb that it recently broke 14 world records for speed and endurance.
No one feature is responsible. The only explanation is that Pierce-Arrows are Pierce-Arrows.
And the new models of 1934 will tend to deserve and to extend this deference
PIERCE-ARROW

**Use of White Space** At the same time he was painting very avant-garde illustrations, Horter was also using traditional painting techniques, as in this ad for Pierce Arrow which appeared in the Jan. 27, 1934, issue of the S*aturday Evening Post* (above). But unlike other ads of the time, note the radical use of white space, influenced by his study of modern art.

**Cubist Influence** Inspired by the work of Braque, Picasso and Gris, Horter created this interpretation of George Gershwin's "Rhapsody in Blue," which appeared in the Dec. 10, 1927, edition of the *Saturday Evening Post (above right).* Painted in watercolor, it was a daring illustration at the time, considering that some established art circles and a large percentage of the general public did not accept cubism as a legitimate art form.

**Texture with Salt** From Demuth, Horter learned such techniques as using salt to obtain textural effects. Here, he first painted in the sky with a very wet wash of color, then sprinkled salt onto the area. When the paper was dry, he brushed the remaining salt away. This kind of dappled, pointillist-like textural effect cannot be obtained in any other way (lower right).

remembered that Horter was one of the first illustrators to experiment with them.

**GRAPHITE/PEN AND INK** From early on in his career, Horter used graphite as both a sketching tool and for finished illustrations. Unlike his friend Robert Riggs (refer to *Step-By-Step Graphics*, Vol. 4, No. 7, p. 122), who used a blending stump and other tools to create a variety of tones, Horter preferred the point of the pencil. His drawings are very linear, even in the shadow areas. It appears he started with line, then added shading in a series of angular strokes visible in the finished drawing. The drawings show many open areas, again reflecting his interest in designing with negative space.

Of this versatile medium, Horter once said: "Pencil drawing, from the humblest sketch to the most highly developed drawing, is perhaps the most intimate record of the artist's thoughts. Such drawings are well worth considering as works of art and have been collected all over the world. They are often an important expression in the development of the artist—his first sketches for any picture is likely to be made in pencil. I have made records for complete compositions with notations on the edges, drawn on envelopes and odd papers. The ease with which the artist can find a pocket size pad, make a ramble around the city, and put down in a few lines such valuable records is evident."

Before joining N.W. Ayer, Horter was primarily a black-and-white artist and pen and ink was one of his favorite tools. At times, he would do a study in graphite, then make a finished drawing with pen and ink. Like his work in graphite, his pen drawings show a remarkable use of line. When drawing subjects with similar detail, like wooded landscapes, Horter advised that it was important to "separate the masses, reducing

**Blending Approaches** In the automobile ad at left, Horter combines his talents for observation and drawing with his interest in modern art. Elegantly designed trees contrast with the rigid architectural forms to create an interesting harmony. Horter distorts the perspective by enlarging the car, then rhymes its blue with a warmer shade of blue in the sky.

**Etchings** Because of his drawing skills, Horter was attracted to etching. In his early etchings, he worked like Whistler, using a needle to draw through the ground then immersing the plate in a bath of nitric acid to "bite" the exposed line. The 11 x 14-inch etching below was used as an ad for Girard Trust, Philadelphia, and employs a rigid construction of horizontal, vertical and diagonal lines.

them to dark, medium and light passages, held together by the structural lines of the tree trunks. Also diminish the detail of the foliage as it recedes."

**ETCHINGS/AQUATINTS** Horter's virtuosity as a draftsman is also evident in his printmaking. In his early etchings, under the influence of Whistler, he used a traditional technique. His needle was drawn through the ground and the plate was immersed in a bath of nitric acid to "bite" the exposed line. However, as he developed as a printmaker, he turned to aquatint, an intaglio printing process in which tones, not just lines, can be etched into a plate, resulting in rich darks as well as transparent tints resembling a wash drawing. This technique became Horter's hallmark in the print medium. Instead of using stop-out varnish, Horter applied the nitric acid in puddles, then pushed the nitric acid around the surface of the plate with a feather until there was sufficient bite in the metal. The longer the acid remained on the plate, the deeper the tone. Like his watercolors, there is an angular quality to these prints as well as a variety of tones and textures.

## BACKGROUND

Like John Sloan, William Glackens, Everett Shinn, W. Emerton Heitland and many others who refused labels, Horter was both an illustrator and a fine artist. Widely collected, his work is part of the permanent collections of such institutions as the Philadelphia Museum of Art, The Pennsylvania Academy of Fine Arts, the Whitney Museum of American Art, the Metropolitan Museum of Art, The Free Library of Philadelphia, The Atwater Kent Museum in Philadelphia, The New Britain Museum of American Art, as well as in numerous collections.

During his years with Ayer, Horter earned large sums of money, lived in a handsome home in a posh area of Philadelphia and began collecting art. Like his friend Robert Riggs, he became obsessed with Indian and African artifacts. He also collected modern French paintings including works by Matisse, Rouault, Denoyer de Segonzac and Picasso, as well as American masters such as Sheeler, Carles, Marin and Demuth, most of whom were his friends.

The Depression caused Ayer to tighten its belt so Horter left and began to teach at the Philadelphia Museum School of Industrial Art, now the University of the Arts, the Graphic Sketch Club and at the Stella Elkins Tyler Art School at Temple University. However, he still pursued illustration and fine art, primarily from a small room on the third floor of his house that was crowded with past work as well as with the artifacts he collected.

Shortly after his death in 1940, a retrospective of his work (organized by the author) was held at the Philadelphia Art Alliance. A truly gifted and intelligent artist, Horter early on foresaw the modern direction art would take and was able to apply it in his own work. ■

*A student of Horter's, artist Albert Gold was a professor at the Philadelphia College of Art for more than 40 years.*

**Earl Horter** A 1938 portrait of Horter (above) by the author.

**Architectural Drawing** In this 1931 illustration published in *Vanity Fair* magazine (above right), one sees Horter's skills as an architectural renderer. Like his more advanced watercolors, this highly polished drawing is held together by a studied geometric composition. Note the strong angular pattern across the building, as well as the geometrical rendering of the doors, figures and automobiles.

**Aquatint** This method became Horter's hallmark in the print medium (right). The artist pushed nitric acid around the surface of the plate with a feather until there was sufficient bite in metal. Like his watercolors, there is an angular quality to these prints as well as a variety of tones and textures.

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*Circle 23 on Information Card*

# SHORTCUTS

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## REVIVING WORN OUT BRUSHES

If you use a brush with inks, white out or any opaque medium, you probably know they are tough on brushes. Instead of throwing away your fine-pointed brushes because of frayed or bent bristles, first clean the brushes with shampoo and water. Next immerse the brush bristles in a cup of boiling water. Roll the brush against the bottom of the cup until the original brush shape is restored. (This process may not work well on some synthetic bristles and some brushes may have to soak in the shampoo for awhile.)

*—CHiD*
*Bronxville, N.Y.*

## SCREENS FOR RUBDOWNS

When you use solid black or color rubdown letters or graphics on a white background, you can obtain screens of the black or color by burnishing a piece of white dot screen on top. A wide range of shades and colors can be created by using different dot percentages and line screens.

*—Richard Sullivan*
*Los Angeles, Calif.*

## NO-SPRAY, DRY ADHESIVE

If spray adhesives, waxers or rubber cement just don't work for you, a new dry adhesive may be a handy alternative. StudioTac sheets are coated with non-repro-blue-tinted adhesive. By burnishing the back side of your art down on a sheet, the repositionable adhesive is applied. (For a free sample pack, send your business card and a note mentioning *Step-By-Step Graphics* to StudioTac Sample Pack Offer, 40 Eisenhower Dr., Paramus, NJ 07653.) ■

*"Shortcuts" are contributed by working professionals like you. Send your ideas to Shortcuts Editor,* Step-By-Step Graphics, *6000 N. Forest Park Dr., Peoria, IL 61614-3592. If we use your material, you will receive $30 for each tip published, plus a small thank you gift. (All submissions become property of* Step-By-Step Graphics.*) Although the techniques we publish here have worked for others and should work for you, too, we cannot guarantee results.*

**Problem** How do I specify the ghosted-back four-color technique that is so prevalent today?

**Solution** *Daniel Dejan, Dejan International, responds:* The popular trade name for this process is "ghosted-back" or "ghosted four-color," but this is an incorrect use of the term "ghosting" (which is actually, an on-press *problem*). The term "screened (back) four-color reproduction" is preferable, as it describes both the end product and the process used to create it.

Quite simply, it is a color separation technique. Nothing is changed in the printing process. When you desire this effect, specify the amount of screen when you send the color piece out for separation, in five percent increments. The subject matter and contrast of the original determines how much screen can be accommodated. The separation can be done in one of three ways:

**COPY CAMERA** Using the copy camera (the predecessor of the scanner) to complete the four-color separations, the operator must calculate the amount of over-exposure for each of the colors (cyan, magenta, yellow and black) to achieve the amount of screen requested.

**LASER SCANNER** The traditional way is to request the screen when the original is laser scanned for separation. A color proof will reveal if you have achieved the effect you desired. This technique can be costly if you or your separator are not familiar with this technique and mistakes in specifying screens are made.

**DIGITAL PROOFING** The final and perhaps preferable way is to scan your original on a Scitex, Crosfield or similar unit. With the resulting digital information on an RGB monitor, you can create the screened image on screen without being committed to expensive film or proofs. Overall color shifts and corrections can also be done at this early stage. Then negatives and a proof can be generated.

Designers at Cartouche (Rowley, Mass.) took advantage of screened four-color printing (which they call "pastel background") in order to introduce a "human element" to a Hewlett-Packard product brochure (a spread from which is shown above), according to Joan Wilking, creative director for the project.

In order to convey her design idea to everyone involved with the project, first Wilking took printed samples of screened four-color printing to her long-time printer, United Lithograph (Somerville, Mass.), to work out the technical details. Next, to demonstrate the effect in comp form for the client, Cartouche designers photocopied typeset copy onto layout vellum and glued the vellum into position over color photocopies of photographs that would be used in the brochure. *Tip: Experiment with varying weights of vellum and with layering more than one sheet in order to achieve different levels of transparency.* After the client approved the concept, the four-color photos were laser scanned and separated conventionally, and stripped into the piece.

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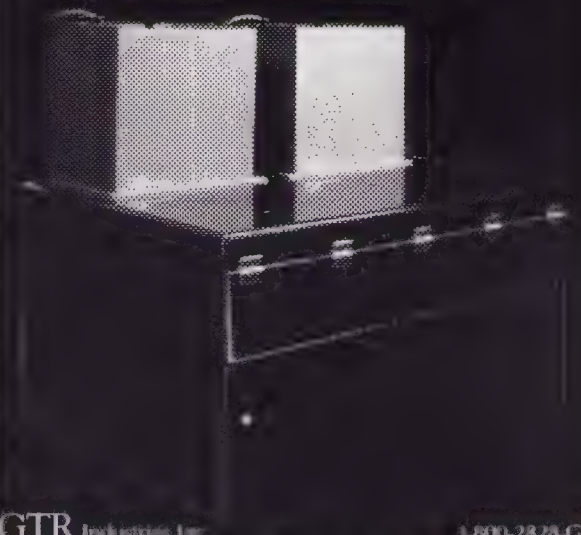

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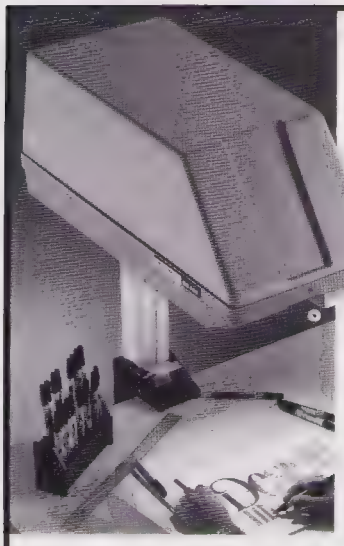

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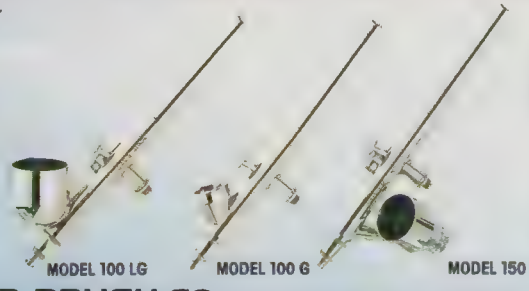
*This illustration was produced using a Badger air-brush and Air-Opaque colors by John Youssi.*

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Circle 26 on Information Card

# Reference Shelf

*Book reviews of the latest and standard titles imparting how-to and career aid information.*

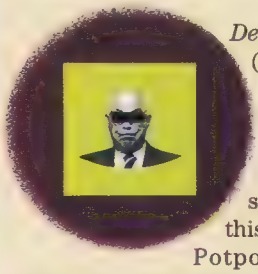
## Comping Techniques

In graphic design, the presentation of an idea is inextricably linked with the idea itself. So one of the first (and most important) skills designers must master is comping. But today, with the wealth of comping tools and techniques available, it is all too easy to confuse a particular technique or technology with creativity itself. So says author Suzanne West, graphic designer and educator, in her latest book, "Comping Techniques; Visualizing and Presenting Graphic Design Ideas." As she rightly points up, it is best to learn a variety of methods and choose the best one based on the project at hand.

The book is divided into four sections: Section 1 covers the design and print reproduction processes; Section 2 covers materials and tools; Section 3 deals with color basics, overlays, underlays and drawing techniques; and Section 4 , specific sketching and comping techniques, including computer-based methods. An appendix that charts prepress and printing methods with their sketching and comping equivalents is especially unique, but certainly is too basic for most professionals. However, on the whole, the book contains lots of useful little nuggets of info you can pick up and use immediately, like the tip that it may be "more efficient to have a magnesium embossing die made for use on the comp than to cut one by hand." But if your shape is a common one, she continues, such as a circle, "the designer can use a drawing template as a die. Once the die is cut, embossing always should be done from the back. Lay the embossing die face down, preferably on a lightbox, lay the paper to be embossed face down on top of the die in the appropriate

## HOW-TO USE PRINTING PAPER RESOURCES

Contact your local paper merchant or write to the paper manufacturer for copies of the following inspirational, informational and technical resources.



*Designer Potpourri* (For examples of images all relating to the subject of freedom of expression.) The second in a series, this year's "Designer Potpourri" contains pieces by Richardson or Richardson, Phoenix; Bernhardt Fudyma Design Group, Inc., New York; Jackson Design, Inc., Nashville; and Sayles Graphic Design, Des Moines, provide not only material for your clip file, but food for thought as well. Buddy Jackson's "Different Drummer" booklet is especially absorbing with its profiles of people who might be considered screwballs by some and geniuses by others. (Gilbert Paper, 430 Anhaip St., Menasha, WI 54952.)

*Crane is Cotton* (For examples of spot color printing on 100 percent cotton papers.) The paper used in this promotion is so soft and easy-on-the-eye, you might consider it for bedtime reading. The advantages of specifying cotton papers is detailed in succinct copy by Rose DeNeve and illustrated in detailed woodcuts by Stephen Alcorn. Unobtrusive design by Chermayeff & Geismar Associates pulls it all together. (Crane Business Papers, Dalton, MA 01226.)

*The Dancing Man* (For examples of four-color photography printed on a colored, textured stock.) Strathmore launches its newly formulated Americana sheet (with 50 percent recovered fiber content) with images that convey the beauty of the American Indian culture. (Strathmore Paper Company, Westfield, MA 01085.)

*Overcoats* (For examples of clear coatings used over four-color printing on uncoated stock.) First in a series of technical booklets from Mohawk Paper Mills, "Overcoats" shows clear coatings applied to four-color reproductions of coats (of course) to demonstrate how they behave on uncoated stock . Specifications for separation, printing and ink are detailed, and clear matte-dull, clear semi-dull and clear gloss thermography, UV coating, clear gloss foil stamping, pearl foil stamping, and gloss varnish are demonstrated. (Mohawk Paper Mills, Inc., Cohoes, NY 12047.)

*Revue* (For examples of four-color photography printed on an uncoated, recycled alkaline stock.) In keeping with today's environmentally friendly mood, this photography portfolio takes us to the woods through peaceful imagery. Two-hundred and 300 line screens are used to good effect on a 15 percent post-consumer waste fiber content paper. (Monadnock Paper Mills, Bennington, NH 03442.)

*Colors and Textures: A Portrait* (For examples of traditionally painted images, computer-generated graphics, and black-and-white and four-color photography printed on a variety of coated, uncoated, colored and white stocks.) Botticelli's Venus, reinterpreted through photography, graphics and painting, is the hub around which this promotion turns. Sibley/Peteet designers take a cubist's approach, repeatedly splitting and rematching images of the goddesses' face to demonstrate the effects possible on different stocks. A swatchbook is included. (James River Corp., 145 James Way, Southampton, PA 18966.)

*Landscaper's Brochure* (For examples of photography printed with 90 percent soybean-based inks and varnishes on recyclable paper.) Paper Sources International has reprinted a brochure originally produced for a landscaping service to demonstrate a dual approach to environmental consciousness—soybean-based inks and recyclable stock. (Paper Sources International, 100 Demarest Drive, Wayne, NJ 07470.)

*Teslin* (For specifications for printing on an uncoated synthetic stock.) This

unpretentious little booklet explains how to use this synthetic stock in laser and copier applications, and explains how to handle it for sheetfed offset printing and for finishing applications like embossing and foil stamping. (PPG Industries, Teslin Products, 36th Floor, One PPG Place, Pittsburgh, PA 15272.)

*Coventry Makes It Easy To Read* (For examples of four-color printing on a smooth, non-glare paper.) This promotion demonstrates the possibilities of a non-glare paper for any text-heavy publication. (Weyerhauser Paper Company, P.O. Box 829, Valley Forge, PA 19482.)

*The Extra Dimension* (For examples of and specifications for embossing on uncoated, textured stocks.) The first piece in this portfolio (ball bearings piled in a bird's nest) is so heavily embossed you might think you were looking at a hologram. This is a very handy guide, worth keeping for its instruction on the depths and shapes of embossing available, how to choose an embosser and an appropriate paper, as well as preparing artwork. (Strathmore Paper Company, Westfield, MA 01085.)

*Still Light* (For examples of four-color photography printed on a soft white, uncoated stock.) The transparency and color of Grant Peterson's photography is complemented by the Astrolite stock on which it is printed. (Monadnock Paper Mills, Bennington, NH 03442.)

*The Designer's English Primer* (For examples of match colors, thermography, clear and colored varnishes and fluorescent inks on colored, uncoated stocks.) Subtitled "For those guilty of worshipping the visual while abusing the verbal," the tongue-in-cheek guide to "Designer's English" lists 10 rules bound to make any comma-splicer feel better. "You can end a sentence with a preposition if you want to," and "There's nothing like a run-on sentence to help you get your thoughts down when you're trying to make a point in a hurry and the creative director is breathing down your neck," are only a few of the designer-friendly non-rules. (Neenah Paper Corp., Neenah, WI 54956.)

*Curtis Correspondence* (For examples of correspondence papers made from recycled materials.) This modest packet of bound envelopes provides adhesive-backed labels, letterhead and glossy insert cards on a variety of stocks. The printed envelopes are prime reference for an idea file. (James River Corp., 145 James Way, Southampton, PA 18966.)

*Duotones* (For technical instructions on how to specify duotones.) This helpful production guide tells how to choose ink colors, proof and specify screens for duotones. Instructions for producing a two-color duotone (with two different colors or using the same color twice), a halftone run over a solid or screened color background (or fake duotone) and a normal halftone with a spread of the same negative for the second color are provided, together with photographic examples of the techniques. (Potlatch Corp., Northwest Paper Division, Cloquet, MN 55720.)

*Cross Pointe Brights* (For examples of one- and two-color graphics printed on brightly colored and fluorescent papers.) Subtlety is certainly not the goal of this blazing promotion. These two booklets display papers which can't help but get noticed. (Cross Pointe Paper Corp., St. Paul, MN 55108.)

*Gilbert and the Private Watermark* (For detailed instructions on how to design watermarked paper.) Another technical reference well worth filing away for later reference, this promo details the history of watermarks, the production process, benefits, types, and positions available. Numerous samples are provided, along with worksheets and tips for designing your own marks. (Gilbert Paper, 430 Anhaip St., Menasha, WI 54952.)

*Shaker Style* (For examples of four-color images printed on a flecked and colored recycled stock.) Images of Shakers and their work are worth keeping for your reference file. (Strathmore Paper Co., Westfield, MA 01085.)

position, then firmly but carefully begin to press the paper against the edges of the die with a spoon-tipped burnisher. Make two or three passes along the edge rather than trying to stretch the fibers all at once." Other quick tips, like using a common metal paper clip as a scoring tool, are sprinkled through the book. The section on construction and drawing is strong, featuring such subjects as isometric drawing, one and two point perspective, subdividing space in increments, using scale increments, scaling a grid, using a calculator for proportioning, and copying angles.

Perhaps more of a novelty than a working tool, the 800K computer disk packaged with the book might just encourage experimentation with a variety of files, if you have the time to do so. It contains PageMaker 4.0 grids for layouts and underlays; greeking text and scans to use in layouts; and files created in PixelPaint, MacPaint II, Freehand, and Photoshop, all for use as a point of departure for developing thumbnails and sketches on the computer.

*A Read/Write Press Book*
*Watson-Guptill Publications*
*1515 Broadway*
*New York, NY 10036*
*160 pages; $45.00 (including 800K disk)*

## Getting Started in Computer Graphics

"Getting Started in Computer Illustration," might be a more apt title for this book (authored by Gary Olsen), since design and page layout are not covered.

The book's first chapter, "The Metaphorical Desktop," attempts to explain how the computer can fit into a traditionalist's world of pencil, paint and paper. Olsen's tone is helpful and sympathetic: "You may be faced with a problem that can be solved only with traditional tools. There is absolutely nothing wrong with going back to the drawing table."

The next chapter, "Tools of the Trade," gets into the nitty-gritty of what an aspiring computer artist might need in his or her studio. Many platforms, including Macintosh, IBM-PC and Amiga, are examined. More importantly, though, it details how the building blocks of hardware and software can be put together in different con-

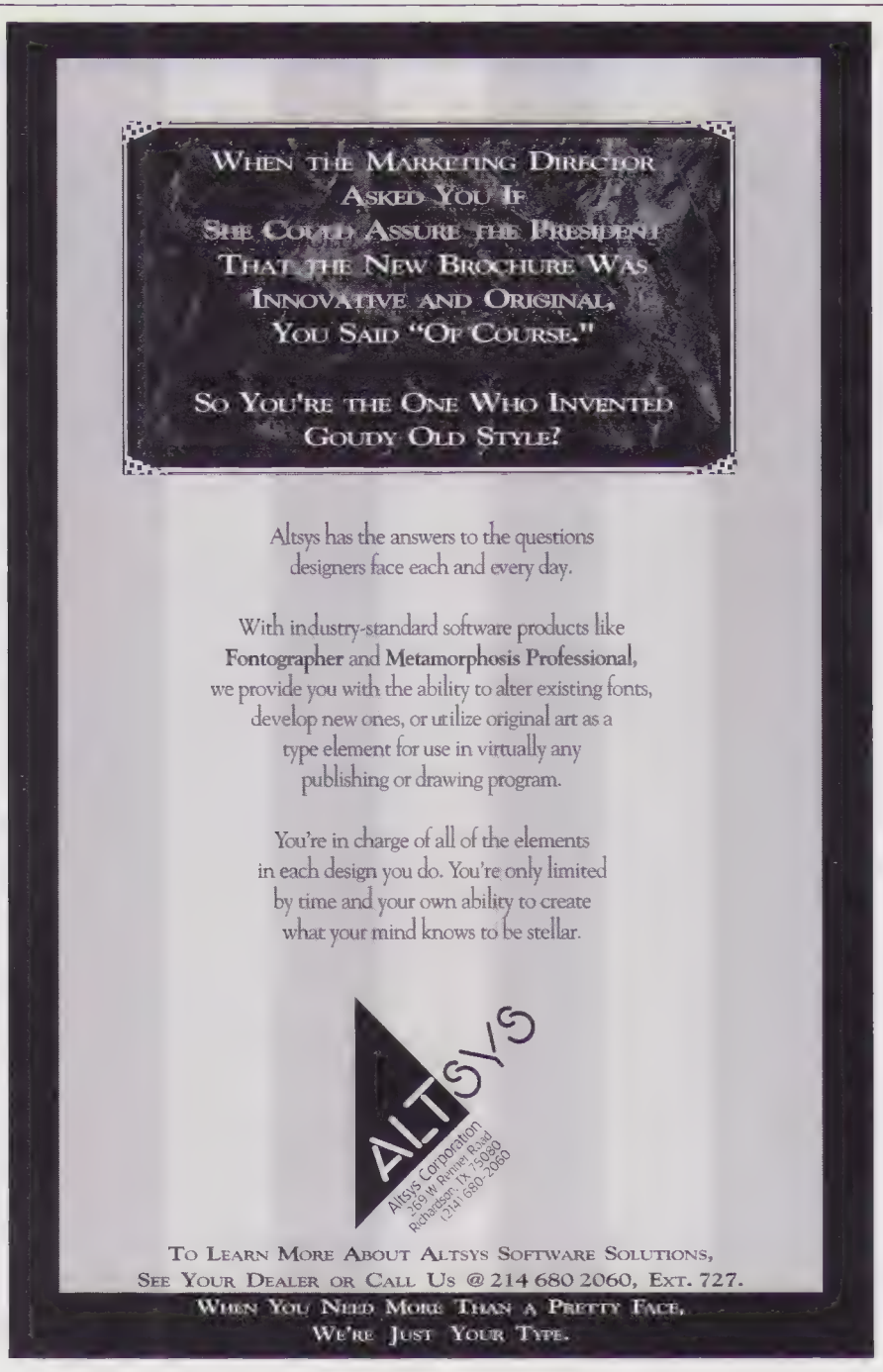
figurations to achieve different results. Personalization of the system is the theme.

At the end of the second chapter is the first of five "Demos," step-by-step project descriptions placed throughout the book that show in words and art how the author renders an illustrated logo (using a paint program), a line portrait (with one paint and one draw program), one line and one color blended illustration (using a PostScript-based draw program), one full-color and one textured illustration (using paint programs), and an illustration which begins as a scanned-in drawing.

"Painting and Drawing," the third chapter, details the difference between preparing object-oriented, drafting graphics, PostScript drawings and bit-mapped paint graphics. Chapters on high-resolution drawing programs and computer paint programs follow. A section on working with service bureaus concludes the book.

All of the four-color images, which serve as both inspiration and example, were produced entirely on computers by such noted artists as Max Seabaugh, Jeff Goertzen and Ron Chan.

*North Light Books*
*1507 Dana Avenue*
*Cincinnati, OH 45207*
*144 pages; $27.95*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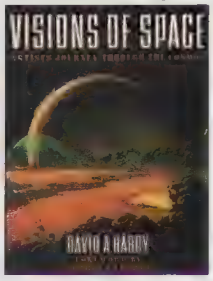
## Visions of Space




If you fancy yourself to be a space buff, or are called upon to do sci-fi illustrations, "Visions of Space," by David A. Hardy, is an excellent resource. The book includes art by some of "earth's finest space artists" (as the book's subtitle reads) and includes a foreword by Arthur C. Clarke. Clarke points up that during the last 10 years or so, many more young artists have come into the field. And surely even more will be inspired by this book, which is basically a compilation of astronomical art created by artists around the world, both historical and current. Beginning with a section devoted to "The Old Masters," the book goes on to categorize the art in chapters titled: Space Craft; Space Stations; Back to the Moon; The Solar System; The Stars; Space Fantasies; and Alien Landscapes.

*Dragon's World*
*Limpsfield*
*Surrey RH8 ODY*
*Great Britain*
*176 pages;*

## Computer Type

This book, subtitled "A Designer's Guide to Computer-Generated Type," features examples of 48 typefaces available on the computer in the form of a type specimen book for desktop artists to trace letterforms from, photocopy samples from and use for layout ideas. Author Michael Rogondino chose the 48 from the thousands available for their particular style and because he felt they could easily be incorporated into a large variety of formats. He includes such

popular faces as Bodoni, ITC Bookman, Caslon, Clarendon, Futura, Helvetica, Goudy, ITC Garamond, Palatino, ITC Stone, Times Roman and Univers. Each font is shown with the upper and lowercase alphabet in its entirety, ranging from six point to 72 point. Sample graphs show several lines of each font in a variety of sizes and leadings, so that designers can compare overall tone of the blocks. A reference guide to marking copy and copyfitting, as well as a glossary, round out the work. Rogondino, a freelance designer and university educator, is also co-author of "Computer Color: 10,000 Computer-Generated Process Colors."

*Chronicle Books*
*275 Fifth Street*
*San Francisco, CA 94103*
*464 pages; $29.95*

## Marketing Your Work

For illustrators and designers just breaking into the field or for those working toward advancing their existing careers, "The Professional Designer's Guide to Marketing Your Work" could be just the sourcebook you need to get your career into high gear.

The book is full of practical insights into the most common marketing problems like: presenting your portfolio, making a persuasive presentation, pricing your work to make a profit and what to look for and avoid in choosing a rep.

For example, author Mary Yeung includes specific factors (geographic scope, deadline, complexity and rights) to consider when setting a price for an illustration, as well as fees that top publications pay for covers and spot art (*Time* and *Newsweek*, $3,000 and up; *Forbes*, *Business Week*, *Esquire*, *The Atlantic Monthly*, $2,000 for a cover and anywhere from $200 to $600 for spot work).

In addition to a section showing portfolios from students and young professionals, there are short profiles of ten successful young illustrators and designers—Lane Smith, Cathleen Toelke, Nancy Skolos, Laurie Rosenwald, David Diaz, Tom Antista and others—who shed light on their own efforts to build a reputation and attract high-profile clients. The stories are interesting and often amusing. Tom Antista, for example, tells of being asked to choose another major in college because he put so little effort into his work. He changed his attitude, graduated at the top of his class and landed a job several weeks later.

The book also includes brief interviews with six prominent art directors—Judy Garlan of *Atlantic Monthly*, D.J. Stout of *Texas Monthly*, Dwayne Flinchum of *Omni*, among them— who explain what they look for when they buy design and illustration.

The book ends with a valuable listing of professional organizations, trade publications, conferences, competitions and directories. If given serious consideration, the information gleaned from this book will help illustrators and designers compete and flourish in an ever-changing marketplace.

*North Light Books*
*1507 Dana Avenue*
*Cincinnati, OH 45207*
*131 pages; $29.95* ■

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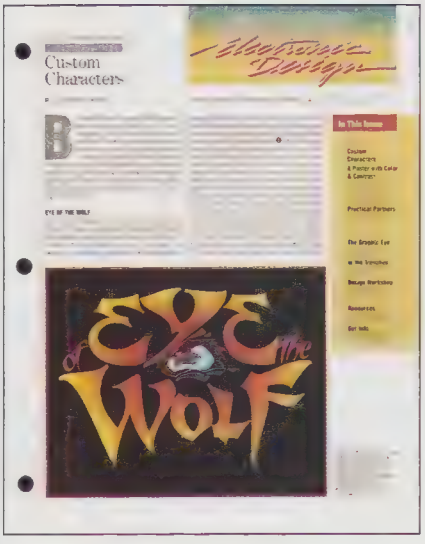


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# CALENDAR

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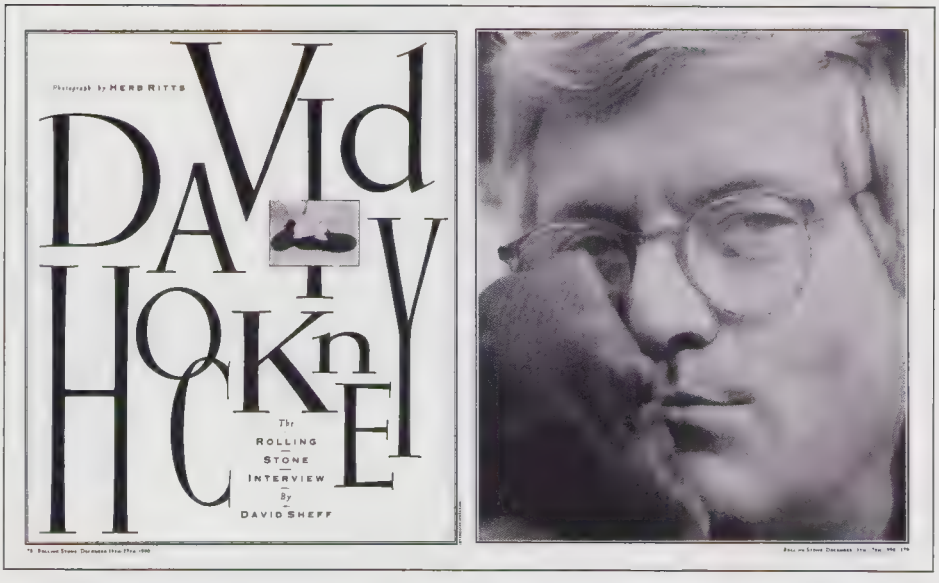



"TDC 37: The 37th Annual Type Directors Club Exhibition" and "The Best of Advertising Typography 1980-1990" will run concurrently through September 13, ITC Center, New York City. (*Rolling Stone* spread from "TDC" show. Typography/design: Catherine Gilmore-Barnes; Letterer: Anita Karl.)

## JULY

**UCDA Summer Programs** July 1-5, Kent State University, Kent, Ohio. Five-day intensive hands-on courses on computer and graphic design. Contact: University & College Designers Association, 2811 Mishawaka Ave., South Bend, IN 46615; (216) 672-7856.

**Illustrations by Howard Pyle Students** Through July 7, Delaware Art Museum, Wilmington, Del. Approximately 20 works by artists including Harvey Dunn, Stanley Arthurs, N.C. Wyeth and Elizabeth Shippen Green will be displayed. Contact: Delaware Art Museum, 2301 Kentmere Parkway, Wilmington, DE 19806; (302) 571-9590.

**The Legacy of Surrealism** Through July 7, Walker Art Center, Minneapolis, Minn. Exhibit includes surrealist works since World War II in various forms including paintings, sculpture, photography and prints. Contact: Walker Art Center, Vineland Place, Minneapolis, MN 55403; (612) 375-7600.

**Quark Users International** July 11-12, Javits Convention Center, New York City. Panels of users, imaging center representatives and QuarkXTension developers will lead the conference on creative applications of QuarkXPress for artists and designers. Contact: QUI, P.O. Box 170, Salem, NH 03079; (603) 898-2822.

**Stanford Conference on Design** July 25-27, Stanford University, Stanford, Calif. Conference speakers include designers Art Chantry and Michael Brock; design critic Martin Filler; MTV Creative Director Abby Terkhule; and architect Billie Tsien. Contact: Stanford Alumni Association, Bowman Alumni House, Stanford, CA 94305-4005; (415) 723-2027.

**GATF Workshops** Various dates throughout the summer and fall, Polytechnic State University, San Luis Obispo, Calif. Workshops include "Introduction to Color and Print Production for Desktop Publishers" and "Desktop Color-Low End." Contact: GATF, 4615 Forbes Ave., Pittsburgh, PA 15213-3796; (412) 621-6941.

**Electronic Directions** Various dates in July and August, Wheeler Hawkins Co., New York City. Hands-on courses using the IBM PC, PS/2, Macintosh and NeXT computer systems for page layout, illustration and word processing applications. Contact: Wheeler Hawkins, 220 E. 23rd St., New York, NY 10010; (212) 213-6500.

**Art Kane Photo Workshops** July 8 through August 25, Cape May Institute, Cape May, N.J. Intensive, hands-on courses and seminars by professional photographers specializing in editorial, photojournalism, fine art, corporate and computer imaging. Contact: Art Kane Photo Workshop of the Cape May Institute, 1511 New York Ave., Cape May, NJ 80204-0458; (609) 884-7117.

**Electronic Photography and the Mac** Courses offered in July and August, Rochester Institute of Technology, Rochester, N.Y. Intensive three-day courses will demonstrate converting slides to video images, scanning photos, photo retouching on the Macintosh and creating image file formats for page layout programs. Contact: Rochester Institute of Technology, Frank E. Gannett Building, P.O. Box 9887, Rochester, NY 14623-0887; (716) 475-2200.

**Siggraph '91** July 28 through August 2, Las Vegas, Nev. Computer graphics conference includes art and design shows, exhibits, panels, courses, workshops and electronic theater. Contact: Siggraph '91 Conference Management, 401 N. Michigan Ave., Chicago, IL 60611; (312) 644-6610.

**TDC 37** Through September 13, ITC Center, New York City. "The 37th Annual Type Directors Club Exhibition" and "The Best of Advertising Typography 1980-1990" will run concurrently. Contact: International Typeface Corp., 2 Dag Hammarskjold Plaza, New York, NY 10017; (212) 371-0699.

## AUGUST

**Color Connections '91** August 5-7, Westin Hotel at Copley Place, Boston, Mass. Chaired by Mills Davis, the theme of the program is

"Process Needs of Power Users and Power Services in the Desktop Arena." Contact: Graphic Communications Association, 100 Daingerfield Rd., Alexandria, VA 22314-2804; (703) 519-8160.

**AMI Festival** August 18-23, Marriott Rivercenter, San Antonio, Texas. Professional development seminars, a two-day industry trade show, workshops and awards banquet for the 1991 AMI Festival multi-image competition winners will be featured. Contact: Association for Multi-Image International, Inc., 8019 North Himes Ave., Suite 401, Tampa, FL 33614; (813) 932-1692.

**Orientation Program I** August 19-23, Polytechnic State University, San Luis Obispo, Calif. Topics to be covered include color reproduction, web and sheetfed offset press operation and solving paper and ink problems. Contact: GATF, 4615 Forbes Ave., Pittsburgh, PA 15213-3796; (412) 621-6941.

**ICOGRADA: Montreal 1991** Montreal Convention Centre, Montreal, Canada. This international conference will feature presentations on designing for an aging audience, socio-cultural convergence, working with different cultures, language and the graphic designer, design as an exportable item, the technological revolution and ecological concerns, as well as business and interactive forums, a graphic design exhibition and debates. Contact: International Council of Graphic Design Associations, 56 Dawson, P.O. Box 1122, Place Bonaventure, Montreal, Quebec, Canada H5A 1G4; (514) 397-0537.

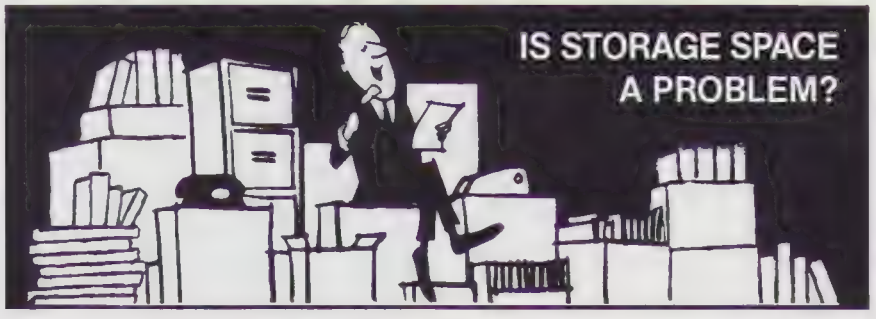
**Hopper International Design Competition** Deadline for entries, August 28. Business collateral and letterhead designs printed on specific brands of Hopper papers are eligible. Judges include Diana DeLucia, James Sebastian, Susan Slover, Peter Good and Tyler Smith. Contact: Kudos Awards Coordinator, A.B. Isacson Associates, 545 Eighth Ave., 23rd Floor, New York, NY 10018; (212) 868-2727.

**Electronic Comics and Computer Art** Through September 14, Cartoon Art Museum, San Francisco. The show will focus on computer techniques used for animation. Contact: Cartoon Art Museum, 665 Third St., San Francisco, CA 94107; (415) 546-9481.

**DGEF Seminars and Workshops** Intensive two- to five-day courses beginning in July and August, including Production Methods , Computer Graphics, Electronic Prepress, Illustration and the Business Side of Graphics. Contact: Dynamic Graphics Educational Foundation, 6000 N. Forest Park Dr., Peoria, IL 61614-3592; (309) 688-8866.

**Pre-Miere Electronic Applications:** Call for Entries Deadline October 31. Sponsored by *Pre-* magazine, entries will be judged in 25 categories of electronic print materials including publications, advertising, packaging and books. Limited to materials printed between August 1, 1990, and September 30, 1991. Contact: *Pre-*, South Wind Publishing, 8340 Mission Rd., Suite 106, Prairie Village, KS 66206; (913) 642-6611. ■

*Send your news releases announcing future events and deadlines, allowing at least two months lead time, to: Calendar,* Step-By-Step Graphics, *6000 North Forest Park Drive, Peoria, IL 61614.*

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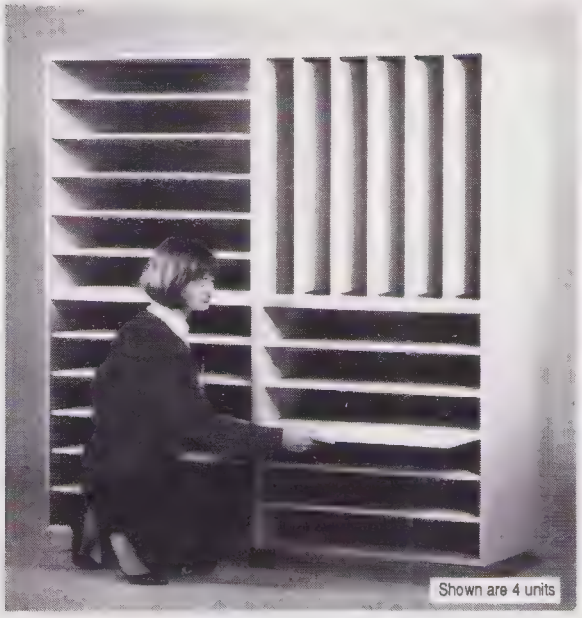


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*In our continuing series examining environmental concerns, learn some of the pros and cons of using non-petroleum-based inks.*

**By Julie Lewitt Weiss**

Sometimes called "green inks," a new generation of vegetable oil-based ink products are being marketed as environmentally safer then their petroleum-based counterparts. They are also promoted as a way to help reduce American dependency on foreign oil—an especially popular viewpoint in the wake of the Persian Gulf War.

But due to the release of a lot of unclear information, many designers, printers, and ink manufacturers are confused about the characteristics, applications, and environmental impact of these inks. To cut through the smoke-and-mirrors effect created by good intentions, marketing opportunities, and a lack of industry standards, here are a few facts about ink and waste management that may help you to make an informed decision about the use of non-petroleum-based inks.

## THIS SOUNDS FAMILIAR

"In the late 1950s and early 1960s vegetable oils such as linseed, soy, corn and canola were common ingredients in ink," explains Stanley Field, technical marketing coordinator with Flint Ink Corporation (known as Sinclair & Valentine prior to 1991). But the inks didn't set fast enough and the introduction of quick-setting petroleum-based inks in the late 1950s and early 1960s enabled printers to stack press sheets higher, run jobs work-and-turn and increase overall productivity. The new petroleum-based products, which still contained some vegetable oils, quickly overtook their slow-drying conventional cousins.

Later, in response to threats of ink shortages and price fluctuations linked to oil crises in the 1970s and 1980s, interest was sparked again in vegetable oil-based inks. In 1985 the American Soybean Association (ASA) began to work closely with General Printing Ink to provide members of the American Newspaper Publishers Association (ANPA) with a new soybean oil-based ink. Intended for web printing on uncoated newsprint, the new ink was launched in 1987 in black, process and Pantone® colors. It performed well and appealed to newspaper publishers for its excellent color saturation, reduced dot-gain, low-rub quality, printability and runability. In addition, using a renewable American resource and supporting the American farmer began to take hold as important and highly-promotable benefits.

According to the ASA, soy inks gained a one-third market share by 1990, representing more than 3,000 American newspapers. From an annual 100 million bushels of soybeans

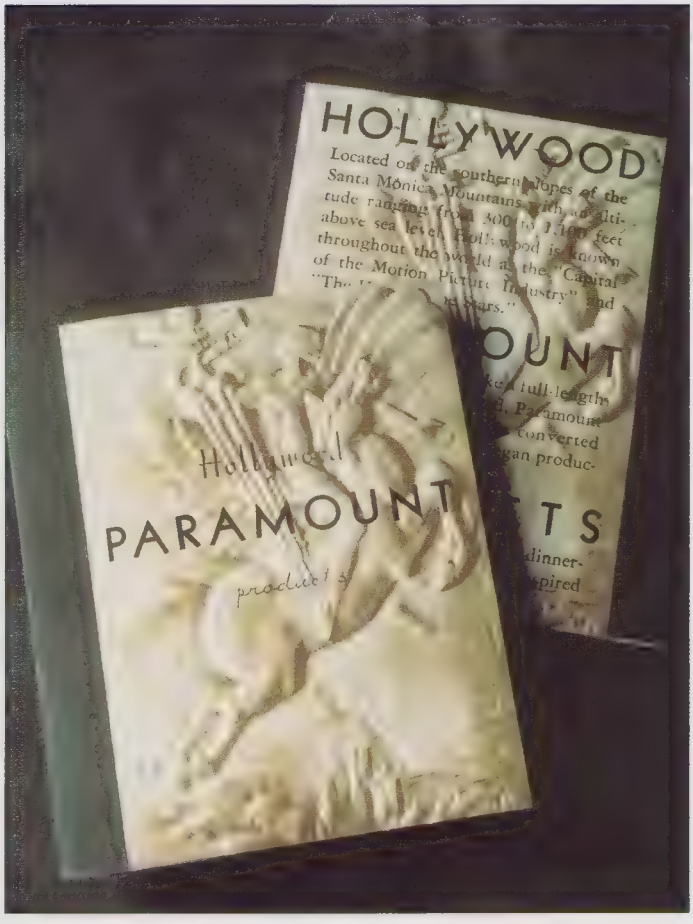
**Wrapping Paper/Postcard Promo** This holiday wrapping paper (shown above) was created for Bulfin Printers, Milwaukee, Wis., with 100 percent soy-based Flint Inks on 70 lb. All Purpose Litho Label (recycled) and Curtis Brightwater Riblaid Parchment (recyclable). (Designed by Hanson Graphic, Inc.; Designers: Joe Sutter and Clair Strykowski; Illustrator: Jon Hargeaves; A.D. Ken Hanson.) Incorporating the same design as the wrapping paper (below), Hanson Graphic, Inc.'s self-promo postcard was printed on 110 lb. cover Esse Smooth (recycled) and Curtis Brightwater Riblaid Parchment. (Designed by Sutter, Strykowski and Cory Dewalt; A.D. Ken Hanson.)

used each year for ink products, about 30 million are destined for soy-based newspaper ink. Approximately 25 percent of ink manufacturers nationwide carry at least one type of soy-based ink, with many in the process of developing others, including inks for sheetfed, heatset and forms printing. Leaders include Flint Ink Corp., Alden & Ott, General Printing Ink, Kohl & Madden, Gans Ink, Supreme, Tone-Pack and Northern Printing Ink Co.

And as before, soy isn't the only vegetable oil being used. Last year, for example, Gans Ink introduced a nut oil-based ink, and Flint came out with Agri-Tek, which uses a blend of soy, corn and other oils. (The focus of this article will be on inks developed for high quality, sheetfed commercial printing.)

## THE PROS AND CONS

In the hands of experienced press operators, some of the newer sheetfed ink formulations perform as well as the petroleum ones and the colored inks are priced competitively. Black soy ink, however, costs about 25 percent more than black petroleum ink since the price is driven by the oil portion of the ink. For colored inks, where the pigments determine price, soy and petroleum inks cost about the same.




**Hollywood Paramount Products** This elegant color catalog, created by Charles Spencer Anderson for Paramount Pictures, showcases home products designed by Anderson and inspired by Hollywood. The cover is printed on Chromolux 700 Gloss coated one side, and the inside spreads are printed on Ikonorex Dull 92.5 cover. (Charles S. Anderson Design; printed by Print Craft with Agri-Tek ink.)

The real controversy is to what degree these products actually benefit the environment. While many professionals insist they do, others are skeptical. Although he notes that it is too early to support this theory with hard evidence, Field and others suggest that when printed products are disposed of in a landfill, vegetable oil inks will attract bacteria more readily than petroleum, and will biodegrade faster. Others comment that if the vegetable oils leach out of landfills into soil and water systems, at least they are harmless organic compounds. Another theory frequently cited is that during the de-inking stage of recycling, the vegetable particles are easier to dislodge from the paper surface than the petroleum particles. This, too, is difficult to quantify.

"There are thousands of ink formulations available and what should govern one's choice is the printed product's end use, the printing process and the substrate," says Gary Jones, environmental specialist with the Environmental Conservation Board (ECB), an association affiliated with the Graphic Arts Technical Foundation (GATF). "Inks are composed of many ingredients, and many will contain some petroleum derivatives even if the oils are vegetable. Vegetable oils really haven't changed over the years. The same basic drying problems haven't changed, either. If anything, it was the introduction of the quick-setting, petroleum-based products that was revolutionary. Vegetable oils, which are classified according to their ability to dry, can be modified through various technical processes to improve drying rates and film properties," says Jones.

## LACK OF STANDARDS

Another concern he underscores is the lack of standards among ink manufacturers. "An ink might contain a small amount of soy oil, and be called a soy ink," says Jones. The ASA, which offers a certification seal for soybean oil users complete with camera-ready logo art, addresses this issue by requiring ink manufacturers who seek certification to include at least 20 percent soy oil for sheetfed inks to assure that the product is truthfully soy oil-based. (Other minimums are 55 percent for news ink, 18 percent for heatset and 40 percent for forms ink.) The certification, however, is basically an identity program for the ASA that offers good public relations for the association

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# DESIGNERS AND PRINTERS SPEAK OUT

"We wanted to get the bandwagon rolling, not just jump on it later," explains Tommy Merickel, president of Print Craft, a St. Paul, Minn., sheetfed printer which runs 99 percent of its jobs using Agri-Tek, a new ink formulated with a blend of soy, corn and other vegetable oils. Already a test site for the handsome recycled papers of the French Paper Company, Print Craft first experimented with soy inks in 1989, but found them flatter than the petroleum inks, slow to dry and lacking rub-resistance. Discussions with Flint Ink led to an agreement for Print Craft to work as Flint's guinea pig for its newest vegetable oil ink, Agri-Tek.

After months of tests and a steady exchange of ideas between Print Craft's production manager Jeff Gray and his Flint counterpart, Joe Chiaramonte, Print Craft launched Agri-Tek in June 1990. Printed on recycled stock for the Minnesota Department of Natural Resources, the project was a four-color process, 12-page brochure filled with dramatic photos of Minnesota's state parks. "We suggested this combination of ink and paper, and the client loved it," says Merickel. The firm's paper specialist, Merlin Nelson, confirms that soy products are best suited for uncoated papers, while Agri-Tek performs well on all stocks, including premium coated sheets.

In addition to improved drying time and good rub-resistance, Print Craft finds the Agri-Tek colors vibrant and glossy, with an attractive translucent quality not found in the petroleum-based products. "The color pigments really come through nicely," says Merickel. Print Craft views the ink's high performance, lower VOC (Volatile Organic Compound) content, compatibility with alcohol substitute fountain solutions, and support of U.S. agriculture as key advantages. It also helps promote the use of recycled substrates.

"With Agri-Tek available in process and Pantone colors, and matte and gloss varnishes, we use conventional inks for special needs only, like printing on Kimdura, which requires an acid-based ink to literally eat into the stock," explains Gray.

**From Fine Art to Line Art** This promotional poster for Adobe Illustrator was designed by Charles Spencer Anderson and printed on French Rayon Serge White by Print Craft in Minneapolis, Minn., using Agri-Tek ink. The 19-color poster was produced on a Macintosh IIcx, with Adobe Streamline and Adobe Illustrator 88.

Research is also in progress for non-petroleum inks to print on Tyvek, foil, plastic and vinyl. Metallic and fluorescent colors are also still in development.

Designer Charles S. Anderson, who frequently works with Print Craft, shares these concerns: "I hear a lot of confusing information about these environmentally safer products. I have some concern about the motivations—but if the results are good for the environment, I'm glad to use them. When Print Craft recently printed an important catalog for Paramount Products [see opening spread of the main article], I didn't know they were using Agri-Tek and I couldn't tell the difference."

Recycled paper expert and designer Claudia Thompson believes the biggest advantage of the vegetable inks is the cleaner work environment for the press operators. And like many designers, she's seen some work printed in soy ink, but not enough to have a good sense of how these inks perform.

Others make no bones about requiring soy-based inks, such as a major client of Great Northern/Design Company in Skokie, Ill. "Thanks to McDonalds, for whom we print corporate materials, posters and color manuals used to teach food preparation, we are now printing about 30 percent of all our jobs in soy inks. It's a good marketing tool and with Illinois being a leader in soybean production, it's important to support our farmers," says Tony Albert, president and sales manager of Great Northern, which also serves Kraft and designers like Samata Design and Bagby Design. When Albert, who uses Kohl & Madden soy inks, shows his customers progressive proofs in both soy and petroleum inks, "90 percent can't tell the difference, and 10 percent guess wrong." But certain colors do seem weaker than their petroleum counterparts. "We have learned to adjust for this variation in the color separations."

Longer drying times must be scheduled, of course, says Doug Aasen, pressroom supervisor of Schultz/Wack/Weir, Inc., in Portland, Ore., especially for short runs. The firm uses soy oil ink for a variety of projects and says it performs well. "We've had good runability, minimal dot-gain, and better gloss than with the petroleum products," says Aasen. He also notices more requests for vegetable oil inks from designers in the Northwest's advertising community. Like many printers now testing soy or vegetable inks, Aasen sees the products improving rapidly and believes it's only a matter of time before everyone will use them.

"To be true environmentalists, we have to adjust our expectations," says Kurt Dammeier, vice president, sales and marketing at Seattle's Print NW. "Our tests of soy inks showed they lacked the snap of

the petroleum inks. We recently used soy ink to print a coupon that was placed in a food container, but we have not found a soy product yet that we'd use in general. With the pigments still a problem, I believe designers could do more for the environment by specifying environmentally friendly colors. The oils are not the biggest problem." Print NW's newest self-promotional piece, designed by Hornall Anderson, exemplifies the dilemmas facing printers and designers. Although the printer encourages environmental awareness and the use of recycled paper, and the brochure includes a statement of the firm's position on environmental issues, the piece uses neither recycled paper nor vegetable oil inks. "As a marketing manager I needed to produce a solid demonstration of our technical expertise. I believe this required a coated sheet." (At the time of his research, Dammeier noted that the coated recycled papers currently available were made from pre-consumer, not post-consumer waste. "That seemed to me a dishonest solution," he said.)

**Ecoprint** This advertising insert for Great Northern/Design Printing Company titled "Ecoprint" was designed by Bill Beedon Design and printed with five colors plus an overall gloss varnish on 85 lb. Master Art recycled cover using soy inks.

## FOR MORE INFORMATION

Here are some organizations you might wish to contact for more information on vegetable-based inks:

- (NAPIM) National Assoc. of Printing Ink Mfrs., 47 Halstead Ave., Harrison, NY 10528; (914) 835-5650
- (PIA) Printing Industries of America, Governmental Affairs, 100 Dangerfield Rd., Alexandria, VA 22314; (703) 841-8158
- (GATF) Graphic Arts Technical Foundation, Environmental Conservation Board, 4615 Forbes Ave., Pittsburgh, PA 15213-3796; (412) 621-6941
- (ASA) The American Soybean Association, 540 Maryville Centre Dr., St. Louis, MO 63141; 1-800-TALK-SOY
- (USEPA) United States Environmental Protection Agency, 401 M Street South West, Washington, DC 20460; (202) 382-2090

### HOTLINES

- Solid Waste Information Clearinghouse: 1-800-67-SWICH
- Resource Conservation and Recovery Act (RCRA)/Superfund to clarify federal regulations and obtain documents: 1-800-424-9346
- Recycled paper procurement guidelines: (703) 941-4452
- (NATICH) National Air Toxics Information Clearinghouse. Newsletter and database for information on state and local agency regulations on air toxics. Pollutant Assessment Branch, MD13, USEPA, Research Triangle Park, NC 27711; (919) 541-0850.
- Toy Manufacturers of America, Inc., 200 Fifth Avenue, New York, NY 10010; (212) 675-1141
- Coalition of Northeastern Governors (CONEG), Hall of the States, 400 North Capitol St., Washington, DC 20001; (202) 624-8450

**Helene Curtis** The eight-color quarterly report above, printed on 100 lb. St. Lawrence Gloss Enamel, was designed by Samata Design and printed by Great Northern/Design Printing Company with soy inks.

**Harmony in Nature** The job at right showcases the work of artists represented by Munro Goodman, Inc.(this piece by Mark Chickinelli). The calendar was printed by Jet Lithocolor, Downers Grove, Ill., on Medallion Felt Finish, Cream White 80 lb. cover (Cross Pointe), with Acme Eco-Pure Soybean oil-based inks. (A.D.: Gail Pollack & Assoc.; A.D./ illustrations: Munro Goodman Inc.).

*(Continued from page 133)*
and the ink manufacturers who participate. It is not a regulatory body, nor is anyone required to seek the certification.

"The greatest advantage of the recent interest in vegetable-based inks is the support of our farmers through a renewable American resource," comments Jones. "Our landfill problem means that even when we do create biodegradable products, they do not decompose. Without oxygen and light, nothing changes form. How we handle our solid waste is the greatest environmental concern today, not what's on the paper."

## HEAVY METAL PIGMENTS

Pigments are central to the controversy over what is a more environmentally friendly printed product. Many of the brilliant colors most favored in advertising and packaging derive their color from pigments containing heavy metals such as lead, chromium, mercury and cadmium. These heavy metals can pose serious health and environmental dangers. "Over the last 10 to 15 years, we have replaced these heavy metals with organic pigments, except for trace amounts. Now we are working to further reduce and ultimately eliminate the traces," says Field.

To date, the organic pigments that have been developed to replace the heavy metals are two-to three-times more costly. A group called The Coalition of Northeastern Governors (CONEG), representing nine states, is seeking legislative action to restrict the use of certain heavy metals in packaging, and ink manufacturers are working to meet such demands even before the law requires it. Field points out that sometimes zealous regulators may not thoroughly understand the chemistry and object to additives that are not dangerous, such as barium and cobalt salts.

"Just as table salt is not pure chloride but a composition of sodium chloride and therefore harmless, these salts, too, are quite safe even though pure barium and cobalt are not," Field explains. In addition, in 1971 self-regulation spawned a stringent set of guidelines, developed by the Toy Manufacturers of America, called toy specs. *Tip: Toy specs supplement the minimum government regulations limiting harmful ingredients in inks for toy packaging that children might chew on. Compliance by printers is required by most American manufacturers such as Mattel, Fisher-Price and Hasbro.* "Printers generally look to buy inks they can use for all kinds of work, so inks meeting toy specs are likely to be used in many other printed products as well," notes Field.

For now, regardless of what type of oil goes into the ink, pigments—which can range from five percent to 30 percent of the ink composition—continue to cause serious concern because of their potential to contaminate soil and water. When printed materials are disposed of in a landfill—directly from the consumer, in the form of post-recycling waste, or as ash from incineration—the toxic, heavy metal particles could

leach out into the soil and water system.

## VEHICLE CONCERNS

A quick look at the vehicle portion of ink will further clarify why the excitement over non-petroleum-based inks may be more marketing-mania than substantive progress. The vehicle, a liquid that suspends the pigment and permits it to be applied to the substrate, is generally composed of either resin-modified phenolics (derived from trees), or hydrocarbon resins (derived from petroleum). One of these elements is then basically cooked together with alkyd resins (which can be either petroleum or vegetable oil-based), to generate a liquid with a viscosity akin to molasses. Finally, a refined kerosene known as the middle petroleum distillate is added. "This," Field emphasizes, "is the petroleum element in ink that soybean or other vegetable oils has recently replaced." These ingredients are blended into a varnish to which pigment and (depending on the end use of the printed product) waxes, driers and other materials are added.

Earth EXPO '91 contest

Kids for Saving Earth

News

Your Kids for Saving Earth Club newspaper — This is number 3

**Wildflower-Wise: The Prairie Fringed Orchid**

There was a time when prairies spanned the great western parts of North America. Fringed orchids decorated the landscape from Oklahoma, U.S.A., to Manitoba, Canada.

When the first farmers began planting crops, this open land was filled with endless fields of flowers. But now many wildflowers and native plants have become endangered in North America and, in fact, all over this planet.

For example, there are fewer and fewer White Prairie Fringed Orchids growing in the tall prairie grasses. Almost magically, when the sun sets, the lovely orchid becomes fragrant. At the same time, like clockwork, the Night-Flying Hawkmoth arrives to eat the sweet nectar from the flower. With pollen dusted wings, the moth spreads the orchid's pollen from flower to flower. This process, called *pollination*, is what produces the flower's seeds. The Night-Flying Hawkmoth is the only insect that spreads the Prairie Fringed Orchid's special pollen. What would happen if it disappeared?

Like many wildflowers, the Prairie Fringed Orchid's habitat (land where it grows best) is disappearing or under attack.

Farmers must plow under the flowers to plant crops. Grazing farm animals and the use of pesticides also cause problems for the orchid. Prairie Fringed Orchids need our help! What can you do? See page 2.

**The Impact of Valuation** This corporate brochure cover for Arthur Andersen & Co. (above) was printed in 11 colors on 80 lb. White Esse (Gilbert) textured cover by Great Northern/Design Printing Company using soy inks. (A.D. Randy Scott; Illustrator Kim Behm.)

**Kids For Saving Earth™** This quarterly newsletter (at left) is printed by The Press in Chanhassen, Minn., on recycled paper using Agri-Tek inks. (Designed by Glen Smith and Sue Savig.)

Almost all ink formulations claiming to be vegetable oil-based also contain some petroleum derivatives or other less-than-friendly ingredients. "The oil portion of the formula could be only four percent of the total composition," explains Gans Ink vice president, Jeff Koppelman. "Then you could have 50 to 70 percent petroleum-based or synthetic materials, not to mention the four percent of cobalt or manganese driers, plus five to 30 percent pigments and five percent assorted waxes. Sounds environmentally safe and biodegradable, doesn't it!" Nonetheless, Gans has brought to market in the last year a soy-based forms ink for web rotary printers running uncoated stock along with Mini-VOC, the nut oil-based ink for printing on coated stock which Koppelman says dries faster than many other soy-based inks.

## REDUCED VOC CONTENT

What is a VOC? The Federal definition of a "VOC" is: "Any volatile organic compound which participates in atmospheric photochemical reactions (except for a list of 15 exempt compounds); or which is measured by a reference method, an alternative method, or which is determined by procedures specified under any subpart of the Federal Regulations."

Why are VOCs important? Because some VOCs are photochemically altered in the atmosphere. These decomposition products can cause smog and can contribute to the deterioration of the Earth's ozone layer. Under pressure to comply with the Clean Air Act (federal legislation implemented by the USEPA), printers tend to look for products that contain lower levels of VOCs.

According to the EPA Test Method 24, vegetable oil inks can contain six to 10 percent VOCs (volatile organic compounds), while quick-set petroleum inks can contain 20 to 35 percent. But VOCs are only a problem when emitted into the atmosphere, and VOC content is not the same as VOC emissions—a common misconception. GATF's Jones strongly believes that in non-heatset and sheetfed printing, negligible VOC amounts are released regardless of the ink formulation, making the lower VOC content of vegetable oil inks a minor benefit.

"The EPA Test Method 24 for VOC content does not simulate the conditions of ink

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Granite Graphics
212/772-0364
201/438-7398

New York City
Arnold & Debel
212/594-5494

NYC/Newark, NJ
Newark Trade Type
201/674-3727

NYC/Newark, NJ
Arrow Typographics
201/622-0111

Lancaster, PA
Centennial Graphics
717/397-8863

Washington, DC
Phil's Photo
800/424-2977

Birmingham, AL
Communication Arts
205/251-6642

Memphis, TN
Graphic Arts Associates
901/795-8973

Indianapolis, IN
Weimer Typesetting
317/635-4487

Minneapolis, MN
Great Faces, Inc.
612/339-2933

Minneapolis, MN
Dahl & Curry
612/338-7171

Milwaukee, WI
Peter A. Altenhofen
414/352-3590

Chicago, IL
The Typesmiths
312/787-8200

Chicago, IL
Eddie Price Typographic
312/738-5130

Cleveland, OH
Typesetting Service, Inc
216/241-2647

Cincinnati, OH
Typo-set, Inc.
513/751-5116

Cedar Rapids, IA
Morgan Meredith, Inc.
319/362-9615

Fort Worth, TX
LinoTypographers
817/332-4070

Dallas, TX
Pacesetters Typographics
214/235-2222

San Francisco, CA
Design & Type
415/495-6280

Los Angeles, CA
PrePress Studio
213/938-3956

Los Angeles, CA
Skil-Set/Alpha Grafix
213/937-5757

LA/Santa Monica, CA
Andresen Typographics
213/452-5521

LA/Huntington Beach, CA
Cuneiforms
714/962-2755

LA/Orange, CA
DeLine-O-Type
714/639-2562

Montreal, QU
Typographie Compoplus
514/861-1488

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application or drying, nor does it measure actual VOC emissions," explains Jones. Studies funded by the Graphic Arts Research and Educational Foundation and managed by the ECB/GATF are underway to determine the amount of ink oil retained in non-heatset web and sheetfed printed products.

## CATALYST FOR CHANGE

"Printers and ink manufacturers do want to know more about environmentally-safer products," say Paul Volpe, technical coordinator of the National Association of Printing Ink Manufacturers (NAPIM). "But terms like 'biodegradable' and 'environmentally friendly' can't be evaluated without more information on the products, treatments and landfills. There's a lot of gray areas and a need for more accurate information."

A cynic might conclude that the driving interest in recycled paper and vegetable oil inks is the marketability of environmental safety. Indeed, thinking green is smart business in the 1990s. Still, many printers, designers and clients are sincere in their desire to find new ways to protect the environment. And not surprisingly, vegetable oil inks have been embraced most energetically by printers and designers in the Midwest, where interest is keen in supporting American farmers. From there, awareness is spreading outward to the coasts. (See "Designers and Printers Speak Out.")

Vegetable oil products can help us reduce our dependency on foreign oil and support American farmers. And they do reduce the presence of troublesome solvents in the pressroom. Some of the environmental benefits, however, are difficult to assess until more scientific data become available. But given the rapid pace of research and new product development in recent years, new information emerges almost daily. While the vegetable oil inks represent some progress forward and a hearty commitment to seeking ways to preserve the environment, still more needs to change—and not only in graphics and design—before printed products will be measurably safer and more biodegradable. ■

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*Julie Lewitt Weiss is a Seattle-based freelance writer who frequently writes for the national printing and graphic arts press. She also works in account services for Manus Direct Response Marketing.*

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VIEWPOINT

# Desktop Color Limits: A Reality Check

***Designers beware! While the pluses are plentiful, it is one designer's opinion that desktop technology does have its limits.***

**By Ned Boudreau**

Whipped on by the phenomenal success of desktop publishing, desktop technologies have reached into all branches of visual communications. As a result, designers and illustrators now are dealing with technical and production issues. One designer I spoke with proudly told me that he had done all the photomontage and color separation for an image he designed. It was a highly dramatic, elegant piece. But it took him 37 hours to generate, and he sent it to a trade shop for quality separations. He admitted he billed his client for only five hours.

This account is indicative of wholehearted acceptance of policies and practices that originate in system vendors' sales campaigns, and in desktop publishing. It also indicates an unfortunate attitude that is affecting the visual arts.

After all, designed communications, the visual arts, are—as the terms denote—art. Color reproduction, on the other hand, combines both an exact science (color) and a highly skilled craft (color reprography). Computer technology is also a science. These facts beg many questions: Will designers become craftsmen, or at best artisans, if they become color specialists? Will design be debased by a move into computers and color reproduction? And do visual artists truly want to be desktop publishers? How far should designers go into the desktop? Where are the boundaries between digital design and desktop publishing?

According to Michael J. Sullivan, founder of Imprimatur Design Systems, Cambridge, Mass., "If you have the time and money, the pieces are there. But be wary." Sullivan, who holds degrees in graphic design, environmental design and computer science, has nearly a $200,000 strategic investment in computer equipment. Designers at his firm generate 75 to 80 percent of their work on a networked desktop system of six Macs, three PCs, two video frame grabbers, and assorted output devices. Based on their computer expertise, Sullivan's staff has been chosen to beta-test leading software. While obviously committed to desktop design, he also sees its limits.

"The problem is this: I can't live without the desktop tools, yet I have trouble living with them. There are truly outstanding advantages to using them, plus my clients use them and expect me to. Yet the inefficiencies cut into my time. If there is one thing visual artists should know, it is this: Don't expect to build a desktop system overnight,

then use it efficiently the next day. Or in five months. Mastery is required. Otherwise, we're just desktop publishers," he explains.

## A DESIGN TOOL?

For Sullivan, the limits of desktop tools are especially apparent at the early origination stage, where creativity, intuition and drawing skills are most important for generating concepts. "Desktop tools force me to be absolutely literal. I have to draw out the entire concept by generating a real layout. In this sense, the desktop is much slower as a creative tool, a sketching tool. Skilled designers can rough out sketches by hand faster than they can on a computer. I might go through three or four iterations of roughs before I hop on the desktop. For many other projects—3-D design, multimedia, graphical user interfaces—I begin on the desktop. But if I wake up at 2 a.m., I don't reach for my Mac. I get out pencils and paper. But that, too, may change in this decade."

Desktop limits are part of the history of the technology. The Mac and IBM were developed for personal computing, especially word processing and accounting; desktop publishing was born as personal text processing. Both the Mac and IBM PC were engineered with the least technically trained end-user in mind and tooled to be downright inexpensive. "The desktop is not an UNDA, it's not a LightSpeed, and in no way is it a Quantel Lightbox," Sullivan maintains. "It is not a system designed for design by designers. The desktop was developed for your average Joe or Sally working at home or in business. Color was never anticipated, nor was creative design."

## SOFTWARE/HARDWARE LIMITS

Software drives all desktop applications, including design. Yet even the most advanced Mac system software, version 7.0, is limited to 32 bit data processing. When dealing with color images, only 24 bits are designated color processors—eight bits for each of the three primary colors. Even with 24 bit color, there often is not enough color information. With current Mac technology, banding and posterization often are very noticeable on output. Visual artists thus have great trouble producing quality color for their full-color designs.

Another major Mac software limit is the lack of asynchronous input-output. Asynch would allow for moving data to and from different devices or locations without interrupting current operations. Asynchronous input-output on the Mac thus would enable different applications to be used concurrently and also allow for background processing. Macs—even the speed demon, the Mac fx—do not have this capability. (Apple managers say they are working on it.) For visual artists this means that a creative team cannot work on the same file at the same time. Since constant origination and refinement is often a group or team effort, this limit is a severe one. It can be partially overcome with networking systems and accelerator boards, but costs climb rapidly thereafter.

The software limit is exacerbated by a

hardware limit: Apple hardware does not provide block transfer of data. This limit seriously affects the rate at which images can be created, enhanced, processed and updated. Accelerator boards help with this limit, but they are a patch on an already flawed system architecture.

Together, these limits mean that the Mac cannot be used efficiently by a design team as a multi-tasking tool. "While design often is a group process, my designers can't work concurrently on the same file I'm working on, even though my equipment is fully networked," notes Sullivan. This is a serious drawback, a true limit. Recent advances in networking and what Apple calls IAC, for Interapplication Communication, show great promise in making the Mac more of a multi-user, multi-tasking workstation, but there is a long way to go. Perhaps the solution is to look to NeXT or the Sun workstation, which don't have these problems.

## COLOR AND INTERFACE LIMITS

Low-cost desktop scanners clearly are inferior to high-end scanners. While images input via desktop scanners are used for many purposes, print designers must use desktop scans as "reference-only" images in high-quality, full-color work. More expensive desktop scanners are used for many applications, but those scanners may run 10 times the cost of a full-color Mac or IBM PC. (See "Costs" section which follows.) In any case, high-end scanners provide much more consistent color fidelity and quality.

Desktop color output is limited by software and hardware constraints that have existed for some years. As Sullivan points out, "Off-the-shelf software doesn't produce good color without a great deal of fiddling, trial, and error. I know: I beta-tested some of the most popular programs. The most recent output drives for PostScript are quite good, but they're very expensive, and they generate the poor color created by the software. For now, designers should stick to their trade shops for really good color because they have more experience."

The best feature of microcomputers is the ease of use. Even computerphobic artists soon feel comfortable. Yet the user interface is still too slow; it is also non-intuitive, Sullivan cautions. As mentioned, artists can use pencils and markers more rapidly at the concept stage, and through as many as four iterations.

Another limit relates to the fact that the user interface is not What-You-See-Is-What-You-Get (WYSIWYG). Even with Adobe Type Manager, the fonts are not exactly what will print. The same is true of the color screen display, yet more so. Screens can be cali-

---

**Digital Bermuda Triangle** Michael J. Sullivan, founder of Imprimatur Design Systems, has several complaints with electronic imagery generation. On creating this piece, "The color on-screen was clear and bright, while in the PostScript slide, the colors were generally dark and muddy. Further, when we imaged the slide, we got these unexpected green streaks on the film. Nobody knew what caused them; we just had to shrug our shoulders."

brated ad nauseam, but they may not produce, on output or on press, the color designers envisioned. The dilemma here is two entirely different technologies—screen display (phosphors, electrons, digital image processing) on the one hand; film and press proofs (dyes, substrates, weather conditions, paper, press speed, and so on) on the second. So visual artists cannot proof directly from the screen, except for concept color; hard copy color is subject to variables like humidity, temperature and skill—no matter how good the color looks on screen.

In terms of type, the desktop clearly places excellent tools in artists' hands. Sullivan is cautious, though: "None of the popular software programs provide anywhere near the typographic quality of a Quadex or a Merg. That quality is needed for many projects, yet I see too many desktop designs marred by shoddy typography."

Sullivan also believes that the graphical user interface encourages laziness, as well as a false sense of mastery. "The desktop tools are so easy to use that people are seduced into thinking they have mastered the technologies, and design arts as well," he asserts. "That's ludicrous." Sullivan believes the art of design is denigrated by those creatives who unreservedly accept desktop tools, and thereby the limits, while moving into areas—like multimedia—for which they are unprepared.

## THE REAL COSTS

Artists should also be aware of the issue of comparable cost. While their initial investment in the desktop (hardware, software, type libraries, and so on) may amount to little more than $5,000, there is no comparably priced input or output device for full-color design. Add a reference-quality scanner, throw in a thermal proofer, and a printer—the cost of a basic desktop system rises to between $25,000 and $35,000. Add the equipment for multimedia (CDs, video disks, conversion and accelerator boards, sequencers, scripting programs), and the price goes from $65,000 to $85,000. Just adding the equipment required to produce mid- to lower high-end color is even more costly. The least expensive, high-quality, desktop color scanner-setter is priced at more than $68,000 (Optronics ColorGetter/Setter). As equipment is added and/or upgraded, the cost per billable hour rises. So, too, must overhead.

**HOW LIMITS AFFECT OVERHEAD** Visual artists should also be aware of the overhead that arrives with their first computer. "Fiddle factor" is the term computerphiles use to denote system maintenance. It includes loading software; backing up files and diskettes, hard drives; dealing with system errors or crashes; and networking. These tasks and training, take visual artists away from their primary creative pursuits. As Sullivan puts it, "Ten to 20 percent of my time now goes to installing software, training on and testing new or updated programs and maintaining the network. I can't charge my clients for this, so the fiddle factor is reflected in overhead."

For designers, perhaps the most ominous aspect of the desktop revolution is the constant upgrading—and training—required to stay competitive. On-going investment is necessary, as vendors offer new or improved products. What this implies is clear: 1) A significant, though lessened learning curve will be a constant factor in the electronic design office; 2) the fiddle factor will become a permanent part of the design process. "These take us away from the practice of art. We have to be very careful not to let technology enslave creativity."

**BEWARE OF HYPE** The message of vendors' recent sales hype is: Take control of design and production! Enhance your creativity! Do your own color separation! Visual artists also hear braggadocio desktop types say they can do anything on a desktop that can be done on color electronic prepress systems (CEPS). This last claim is absurd, not just wrong; it is based on ignorance.

"I know of no one who is a skilled designer, a software expert, a prepress specialist and color scientist. This is exactly what vendors and desktoppers want the creative community to believe. I object," states Sullivan. "Creative visual communication is an art. Color is a science; so is software. Prepress is a highly skilled trade requiring years of training. Why should artists—who value disciplined creativity, intuition, imagination—bother with less artistic processes they know little about? If we step back, we can see that the art of design is getting lost."

## BEYOND THE LIMITS

Despite these limits, Sullivan is very optimistic about the future of digital design for the visual arts. Vendors are, finally, developing truly design-oriented desktop software, and they are working toward standards for networking currently non-compatible computer technologies. Fiber optics and ISDN (Integrated Services Digital Network) will soon provide integration of diverse data sources, making multimedia arts much more practical. Visual artists also will be able to integrate their operations, often via desktop technologies, with their clients and production houses.

Visual artists who embrace the desktop have positioned themselves for the future. "Digital design is creating an entirely new, tremendously exciting language for the visual arts," notes Sullivan. "But designers will need to learn much more about the medium to overcome the limits. The desktop is just the beginning, an apprenticeship. Personally, I am looking forward to the new challenges. I'm especially eager to see the first digital widget for 3-D, full-color laser holography. Now there's a medium that makes my artistic blood run hot." ■

*Editor's Note: We welcome your reactions to Ned Boudreau's "Viewpoint," and hope to publish your letters in an upcoming issue. Write to: Viewpoint, Step-By-Step Graphics, 6000 N. Forest Park Dr., Peoria, IL 61614-3592.*

*Ned Boudreau is president of Communications Technology: Strategies, a public relations consultancy.*

## FEATURED IN THIS ISSUE

*An alphabetized list of illustrators, designers and organizations featured in this issue.*

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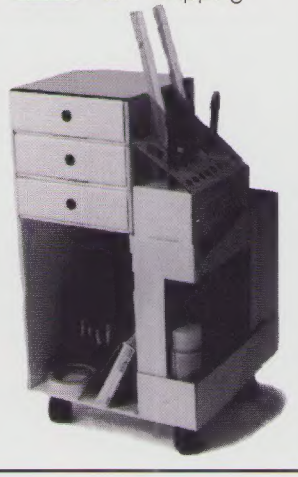

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# LOOKING AHEAD

*A sampling of upcoming articles:*

## IRVING PENN

Part one of an exclusive two-part story detailing how the legendary Irving Penn works with Calloway Editions to design a book showcasing his photographs. Part two will follow the book's complex print reproduction process, including a behind-the-scenes study of how world-respected Richard Benson makes the negatives for the book.

## ABSOLUT DESIGN

New York-based modelmakers McConnell & Borow, Inc. and photographer Steve Bronstein create the next image in the Absolut city series—Absolut Miami—by constructing then photographing a miniature beachfront scene.

## LIGHT FROM SCRATCHBOARD

When illustrator Brian Pinkney discovered scratchboard, it changed the entire nature of his detailed linework. Watch as the son of award-winning illustrator Jerry Pinkney demonstrates how to bring light out from the black board—as well as how he adds color using oil pastel—as he illustrates a folktale for a childrens' book.

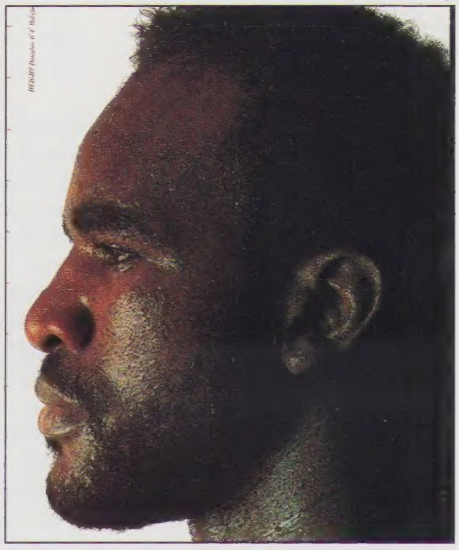
## CASTING HANDMADE PAPER

Jose Luis Ortiz demonstrates the ancient process of casting handmade paper—developing the cast image, making the molds, shredding, coloring and pouring the pulp—in a colorful poster design.

## USING POSTSCRIPT TYPE OUTLINES

If you're working on the desktop computer, you now have access to the outlines of typefaces, giving you the freedom to modify the characters, turn them into graphics, and much more. In this enlightening article, electronic designer and educator Simon Tuckett demonstrates a variety of ways you can use this capability to enhance your design and illustration work.

## 'ULTRA' FINE LINE PRINTING



Not too long ago, 300 line screen reproduction was considered the four-minute mile of the printing industry. But today it's relatively common. So what's on the horizon? You guessed it: 600 line screen printing today, and 900 tomorrow. (Watch for the special educational insert printed by Woods Lithographics in Phoenix, Ariz., using their new UltraDot 600 Printing System.)

## C.F. PAYNE'S MIXED MEDIA MAGIC

C.F. Payne achieves depth and luminosity with acrylic underpainting, watercolor washes, oil glazes and airbrush as he paints a series of illustrations for *Sports Illustrated* magazine.

## ALSO TO COME:

–Methods of Master Saul Tepper.
–Business Side: Ideas for holiday greeting cards for business associates.
–PressTalk, Shortcuts, Career Tips, ABCs of Type, Business Side and more.

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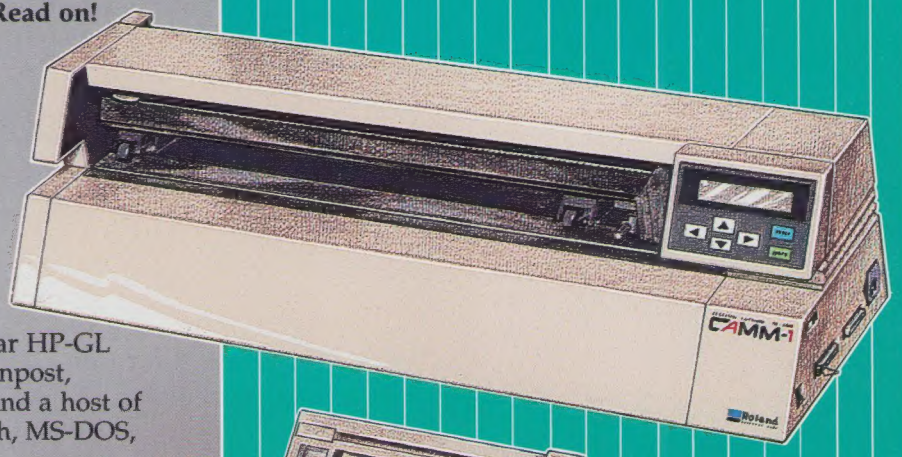


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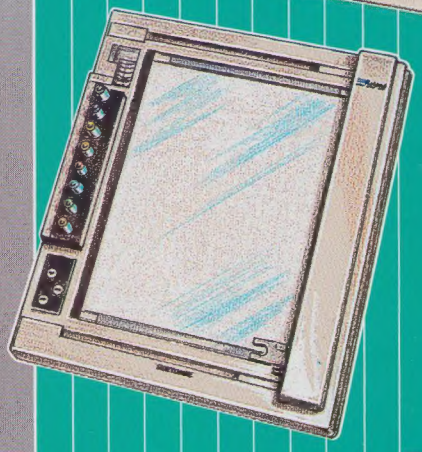

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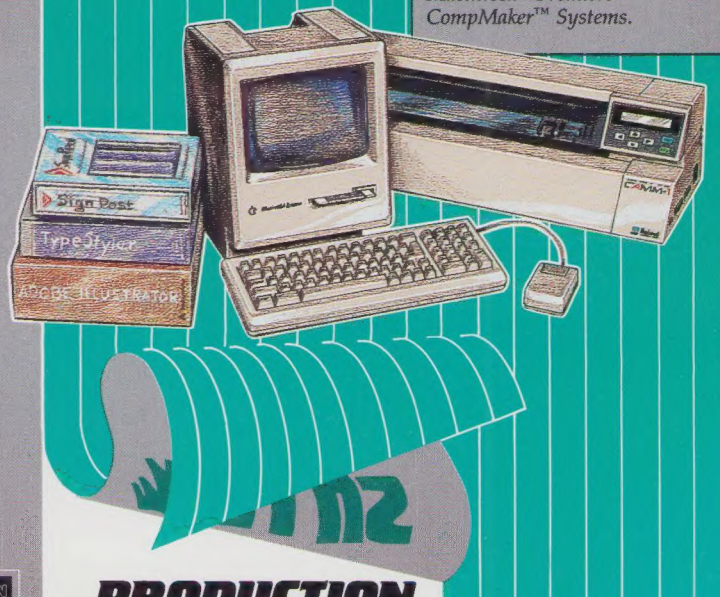


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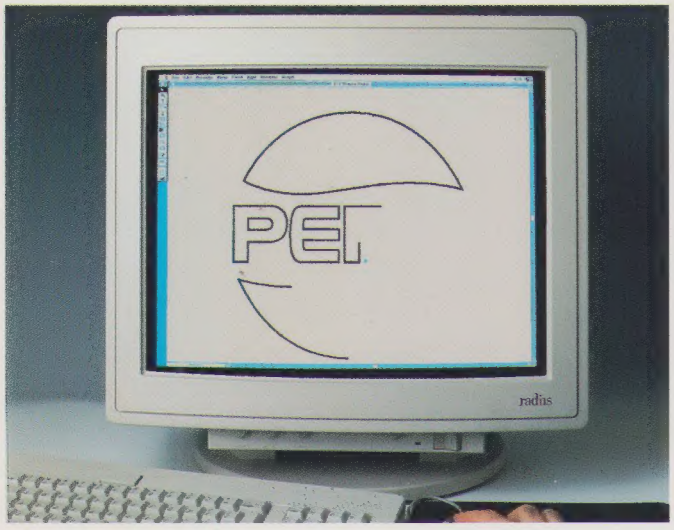


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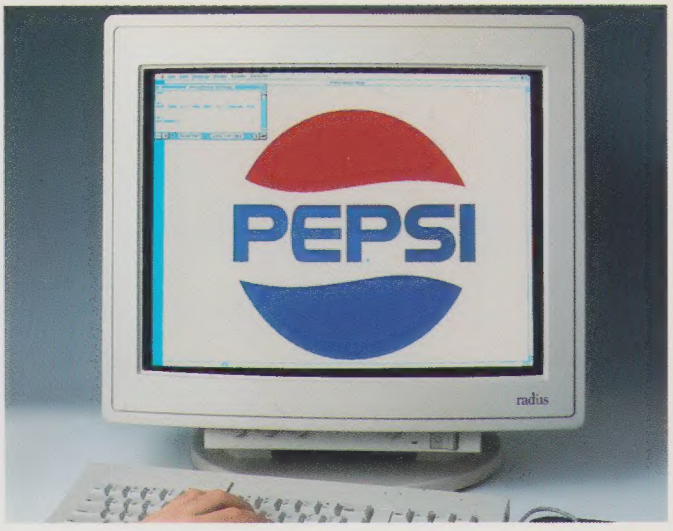


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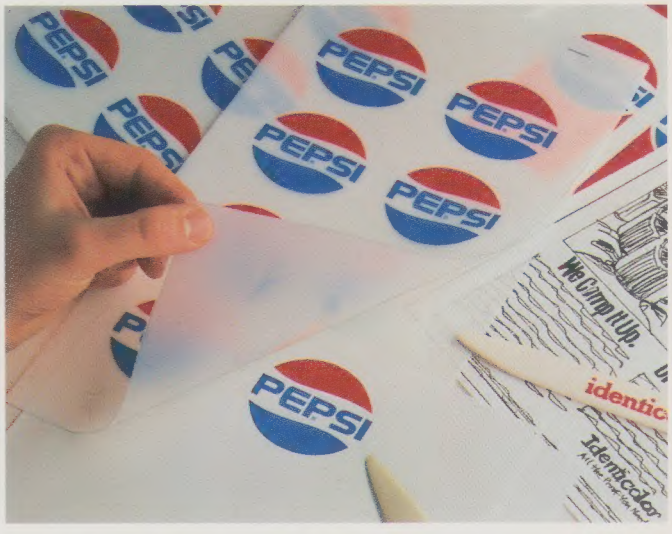


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